B018P9-TMA-106

155

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 01-088

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : January 21, 1992

1.0 DESCRIPTION OF CASE :

One soil sample was analyzed for TCL Organics-Volatiles, Semivolatiles and Pesticide/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision 2/88.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX
B018P9	A2-01-088-01A	SV & P	SOIL
B018P9 MS	A2-01-088-01B	SV & P	SOIL
B018P9 MSD	A2-01-088-01C	SV & P	SOIL
B018P9	A2-01-088-01D	V	SOIL
B018P9 MS	A2-01-088-01E	V	SOIL
B018P9 MSD	A2-01-088-01F	V	SOIL

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL SOIL :

The samples were analyzed by heated purge and within the CLP SOW holding times. All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All of the BFB tunes are injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL SOIL :

The samples were extracted and analyzed within the CLP SOW holding times. All of the QC results were within the limits specified by the EPA CLP SOW.

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 2/10/92 and analyzed in accordance with the EPA CLP SOW.

During the sequence the computer program was interrupted causing it to stop collecting data from the data systems' storage box (interface box). This interface box can hold only a limited number of sample results after which it begins to overwrite previously stored files. Because of this the data files for the EVAL B standard analyzed at 5:57 on 2/11/92 (B21030 and A21030) and the data file for one sample injection (B21029 and A21029) analyzed at 5:17 on 2/11/92 were over written. The data for the injection made at 5:17 (B21029) was overwritten in the interface box by the injection made at 6:38. The data for the EVAL B injection made at 5:57 (B21030) was overwritten in the interface box by the injection made at 7:18. The EVAL B standard and the sample were set up and re-injected later in the sequence.

The sequence was interrupted after the injection made at 7:18 on 2/11/92 to determine what samples needed to be re-injected. Since the EVAL B had been overwritten, the injections that were made after IND A (B21024) and up to the injection made at 7:18 on 2/11/92 were re-injected. The sequence was restarted with the injection of IND A at 11:04 and IND B at 11:44 on 2/11/92. IND A and IND B were injected to assure that the system still met the Protocol criteria. EVAL B was then injected to resume the sequence.

IND A and IND B were injected consecutively in the sequence at 16:24 and 17:04 on 2/12/92. IND A (B21075) was used for quantitation. The IND B on the confirmation column had a calibration factor for Aldrin above the allowable 20% difference. There was some interference within the injection that co-eluted with Aldrin on the confirmation column but not on the primary column. Therefore, the calibration was still maintained. This standard is not used for quantitation.

SAMPLE NOTES :

LOW LEVEL SOIL :

The samples were extracted and analyzed within the CLP SOW holding times. All of the QC results were within the limits specified by the EPA CLP SOW.

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth
CLP Program Manager

Dennis D. Wells
Technical Director

00005

EPA SAMPLE NO.

B018P9

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01D

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20123R14

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 8 Date Analyzed: 01/23/92

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	8	B
67-64-1	Acetone	21	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B018P9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01D

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20123R14

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 8 Date Analyzed: 01/23/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

IB

00007
EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B018P9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 20131N06

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 8 dec. Date Extracted: 01/24/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

GPC Cleanup: (Y/N) N pH: 9.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl Alcohol	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	bis(2-Chloroisopropyl)Ether	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-Propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
65-85-0	Benzoic Acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethyl Phthalate	360	U
208-96-8	Acenaphthylene	360	U

00008
EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B018P9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 20131N06

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 8 dec. Date Extracted: 01/24/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

GPC Cleanup: (Y/N) N pH: 9.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
84-74-2	Di-n-Butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	710	U
56-55-3	Benzo(a)anthracene	360	U
117-81-7	bis(2-Ethylhexyl)Phthalate	360	U
218-01-9	Chrysene	360	U
117-84-0	Di-n-octyl Phthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)Pyrene	360	U
53-70-3	Dibenz(a,h)Anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

B018P9

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 20131N06

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 8 dec. Date Extracted: 01/24/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

GPC Cleanup: (Y/N) N pH: 9.6 Dilution Factor: 1.00

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN ALCOHOL	2.38	940	BJ
2.		UNKNOWN ALCOHOL	2.85	22000	BJ
3.		UNKNOWN ALCOHOL	2.93	220	BJ
4.		UNKNOWN ALCOHOL	4.03	290	BJ
5.		UNKNOWN CARBOXYLIC ACID	21.54	180	J
6.		UNKNOWN ALKANE	26.04	140	J
7.		UNKNOWN ALKANE	27.27	220	J
8.		UNKNOWN ALKANE	28.47	360	J
9.		UNKNOWN ALKANE	29.62	250	J
10.		UNKNOWN ALKANE	30.72	140	J

9713506.0758

00010
EPA SAMPLE NO.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

B018P9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01A

Sample wt/vol: 30.3 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 8 dec. Date Extracted: 01/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/12/92

GPC Cleanup: (Y/N) N pH: 9.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.6	U
319-85-7	beta-BHC	8.6	U
319-86-8	delta-BHC	8.6	U
58-89-9	gamma-BHC (Lindane)	8.6	U
76-44-8	Heptachlor	8.6	U
309-00-2	Aldrin	8.6	U
1024-57-3	Heptachlor epoxide	8.6	U
959-98-8	Endosulfan I	8.6	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	U
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	86	U
53494-70-5	Endrin ketone	17	U
5103-71-9	alpha-Chlordane	86	U
5103-74-2	gamma-Chlordane	86	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	86	U
11104-28-2	Aroclor-1221	86	U
11141-16-5	Aroclor-1232	86	U
53469-21-9	Aroclor-1242	86	U
12672-29-6	Aroclor-1248	86	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	170	U

9713506.0759

Westinghouse Hanford Company

CHAIN OF CUSTODY ARLI

Custody Form Initiator CMChance

Company Contact J.D. Fancher

Telephone (509)376-2081

Project Designation/Sampling Locations 100 ~~DR-1 Vadose~~ HR-3 GW Zone Sampling

Collection Date 1-16-92

BH 199-05-14

Ice Chest No. U-01

Field Logbook No WHC-N-588 D

Bill of Lading/Airbill No.

Offsite Property No.

Method of Shipment Overnight Air Delivery

Shipped to TMA/NORCAL 2030 Wright Ave. Richmond Ca. 94804

Possible Sample Hazards/Remarks Maintain at 4°C

Sample Identification

B018P9

~~(1)1000ml G bottle(Radiochemistry,Sr-90, C-14,Tc-99)~~	(1)1000ml G bottle(Radiochemistry, Sr-90, C-14,Tc-99)
~~(1) 250ml G bottle(ICP/AA metals,Hg)~~	(1) 250ml G bottle(ICP/AA metals, Hg)
(1) 250ml aG bottle(Semi-VOA,PCB's/PEST.)	(1) 250ml aG bottle(Semi-VOA,PCB's/PEST.)
~~(1) 125ml G bottle(Cyanide)~~	(1) 125ml G bottle(Cyanide)
(1) 125ml G bottle(VOA)	(1) 125ml G bottle(VOA)

☐ Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
CMChance Cory Chance	Kermit Blum	1-21-92 1115
Relinquished by: 1-21-92 Kermit Blum	Received by: T Bernard	Date/Time: 1/22/92 1000
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

osal Method:	Disposed by:	Date/Time:

ents:

A-6000-407 (12/90)

9716506.0760

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector C M Chance Date Sampled 1-16-92 Time 0906 hours

Company Contact J.D. Fancher Telephone (509) 376-2081

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
	~~1-1000ml glass~~	~~Soil~~	~~Gross alpha/beta,Gamma Spec.,Sr-90,Tc-99,C-14~~ AlphaSpec
	~~1-250ml glass~~	~~Soil~~	~~ICP/AA metals, Hg(CLP)~~
B01899	1-250ml amber glass	Soil	Semi-VOA,PCB's/PEST.(CLP)
	~~1-125ml glass~~	~~Soil~~	~~Cyanide(CLP)~~
	1-125ml glass	Soil	VOA(CLP)
	1-1000ml glass	Soil	Gross alpha/beta,Gamma Spec.Sr-90,Tc-99,C-14
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
	1-250ml glass amber	Soil	Semi-VOA,PCB's/PEST.(CLP)
	1-125ml glass	Soil	Cyanide(CLP)
	1-125ml glass	Soil	VOA(CLP)

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 1-21-92

alysis Required _____

ate whether sample is soil, sludge, water, etc.

back of page for additional information relative to sample location.

A-6000-406 (05/90)

CASE NARRATIVE

1. Project 100-HR-3 GW (TMA/Norcal Group No. 7009) results of the analyses are reported. The sample ID is:

Customer Sample ID	TMA/Norcal Group No.
B018P9	7009-1

2. The analysis reported are:

SOIL	
Analyte	Group # & Sample #
Gross α	7009-1
Gross β	7009-1
^{14}C	7009-1
^{90}Sr	7009-1
^{99}Tc	7009-1
Gamma Scan	7009-1

3. Results are reported pCi/g with 2 σ errors.

4. The QC samples consisting of a spike, a laboratory control sample, and a replicate were processed with each batch as shown on Table 1.

TABLE 1

Preparation Batch Samples Processed	Data Package
7009-1	- SOIL

QC SAMPLES PROCESSED:

Sample I.D.	Type	Analyses	Reported with Data Package
7009-2 (QC 7962)	Spike	Gross α,β	X
7009-3 (QC 7971)	LCS	Gross α,β	X
7009-4 (QC 7972)	Replicate	Gross α,β	X
7009-2 (QC 7966)	Spike	^{14}C	X
7009-3 (QC 7971)	LCS	^{14}C	X
7009-4 (QC 7976)	Replicate	^{14}C	X
7009-2 (QC 7964)	Spike	^{90}Sr	X
7009-3 (QC 7969)	LCS	^{90}Sr	X
7009-4 (QC 7974)	Replicate	^{90}Sr	X
7009-2 (QC 7965)	Spike	^{99}Tc	X
7009-3 (QC 7970)	LCS	^{99}Tc	X
7009-4 (QC 7975)	Replicate	^{99}Tc	X
7009-2 (QC 7963)	Spike	Gamma Scan	X
7009-3 (QC 7968)	LCS	Gamma Scan	X
7009-4 (QC 7973)	Replicate	Gamma Scan	X

5. Analysis, reanalysis, and reworks, etc.

Gross Alpha and Gross Beta Analyses: The results of the spike, the laboratory control sample, and the replicate were satisfactory.

Carbon-14 Analyses: The found/added ratio was 0.84 ± 0.03. The replicate results did not agree well. The QC blanks were high because of cross contamination. Steps are being taken to avoid cross contamination by use of memory blanks. Results of the spike sample was satisfactory.

Strontium Analyses: The yield for 1 analyses was 68%. The results of the spike, the laboratory control sample, and the replicate were satisfactory. No abnormalities were encountered.

Technetium Analyses: The yield for 1 analyses was 23%. The results of the spike, the laboratory control sample, and the replicate were satisfactory. No abnormalities were encountered.

Gamma Scan Analyses: QC sample 7009-2 (QC-7963), spike for gamma scan, and QC sample 7009-3 (QC-7968), blank for gamma scan, were mislabelled in the laboratory; 7009-2 was counted as a blank and 7009-3 was counted as a spike. With the mislabelling considered the found/added ratios for 7009-2 (QC-7963) spike for gamma scan are ^{60}Co: Found = (1.731 ± 0.306) E+02, Added: (1.595 ± 0.0638) E+02; F/A = 1.08 and ^{137}Cs Found = (1.412 ± 0.261) E+02, Added: (1.252 ± 0.0501) E+02; F/A = 1.13, and the results of the spike and blank were satisfactory. No other abnormalities were encountered.

ATTACHMENT 1 DATA TABLE

Collection date: 1/16/92

Customer I.D.	TMA/Norcal Group No. 7009	Analysis	Results pCi/g ± 2 σ	
B018P9 (soil)	1	Gross Alpha	(2.87 ± 3.10)	E+00
		Gross Beta	(9.35 ± 2.10)	E+00
		^{14}C	(13.23 ± 5.88)	E+00
		^{90}Sr	(2.6 ± 3.2)	E-01
		^{99}Tc	(1.6 ± 2.6)	E-01
		Gamma Scan:		
		^{40}K	(1.120 ± 0.099)	E+01
		^{51}Cr	<1.739	E+01
		^{60}Co	<6.062	E-02
		^{65}Zn	<1.892	E-01
		^{134}Cs	<6.370	E-02
		^{137}Cs	<4.755	E-02
		^{226}Ra	(3.524 ± 1.103)	E-01
		^{228}Th	(5.469 ± 1.094)	E-01
		^{232}Th	(5.009 ± 2.003)	E-01

9713506.0764

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator CM Chance

Company Contact J.D. Fancher Telephone (509) 376-2081

Project Designation/Sampling Locations 100 ~~DR-1 Vadose~~ HR-3 GW Zone Sampling Collection Date 1-16-92

BH 199-D5-14

Ice Chest No. U-01 Field Logbook No. WHC-N-588 D

Bill of Lading/Airbill No. Offsite Property No.

Method of Shipment Overnight Air Delivery

Shipped to TMA/NORCAL 2030 Wright Ave. Richmond Ca. 94804

Possible Sample Hazards/Remarks Maintain at 4° C

Sample Identification

B018P9

(1)1000ml G bottle(Radiochemistry,Sr-90, C-14,Tc-99)
(1) 250ml G bottle(ICP/AA metals,Hg)
(1) 250ml aG bottle(Semi-VOA,PCB's/PEST.)
(1) 125ml G bottle(Cyanide)
(1) 125ml G bottle(VOA)

(1)1000ml G bottle(Radiochemistry, Sr-90, C-14,Tc-99)
(1) 250ml G bottle(ICP/AA metals, Hg)
(1) 250ml aG bottle(Semi-VOA,PCB's/PEST.)
(1) 125ml G bottle(Cyanide)
(1) 125ml G bottle(VOA)

☐ Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
CM Chance Cory Chance	Kermit Blum	1-21-92 1115
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90)

9713506.0765

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector CM Chance Date Sampled 1-16-92 Time 0906 hours

Company Contact J.D. Fancher Telephone (509) 376-2081

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
			AlphaSpec
B018P9	1-1000ml glass	Soil	Gross alpha/beta,Gamma Spec.,Sr-90,Tc-99,C-14
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
	1-250ml amber glass	Soil	Semi-VOA,PCB's/PEST.(CLP)
	1-125ml glass	Soil	Cyanide(CLP)
	1-125ml glass	Soil	VOA(CLP)
	1-1000ml glass	Soil	Gross alpha/beta,Gamma Spec.Sr-90,Tc-99,C-14
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
	1-250ml glass amber	Soil	Semi-VOA,PCB's/PEST.(CLP)
	1-125ml glass	Soil	Cyanide(CLP)
	1-125ml glass	Soil	VOA(CLP)

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 1-21-92

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location

9713506.0766

000017

Overnight Delivery

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
Westinghouse Hanford Company		W92-0-0011 7120

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Geotech.	EFSG	Env. Charac. & Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing Air EMERY ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
TMA/NORCAL 2030 WRIGHT AVE RICHMOND CA 94804	Robert Fox
	Full Title: Project Coordinator

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
37 lbs	Coleman U-01 poly cooler. Contains soil samples that are double-bagged and packed in wet ice and vermiculite. Samples are nonhazardous. Sample #: B018P9	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

To support drilling and sampling at 100 Areas.

Bill of Lading # 250986530 3

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
		1/21/92

Location of Property (Area & Bldg.)	Contact	Phone
100 Area 100HR-3	J. D. Fancher	376-2081

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
1-20-92	PB213 81241	N/A

Originated By	Date	Authorized By	Date
Signature and Name of Property Control	1-20-92 Custodian Date	Property Management Approval	1/20/92

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Date 1-20-92				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Green – Property Control Custodian (Issuing Office) Yellow – Retain Pink – Originator

54-3000-479 (09/89)

000018

of

dex:

container

iment

EMERY WORLDWIDE

A CF Company

FORM OF PAYMENT

Check ☐ GBL ☐ FCCOD ☐

Bill to Shipper ☒ Bill to Consignee ☐ Third Party Billing ☐

Shipper's Account Number: E 850281585

SERVICES

UNITED STATES / CANADA: Same Day ☐ XXAM ☐ PM ☐ Second Day ☐ Saturday Delivery ☐

INTERNATIONAL: Express ☐ Preferred ☐ Standard ☐ Business Documents ☐ Customs Clearance ☐ Delivery ☐

Date: 01-20-92 | Origin: PSC | Shipment Number: 250986530 3

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
US DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD
BLDG 1163
2355 STEVENS DRIVE
RICHLAND WA Canada ☐

To:
ROBERT FOX
TMA/NORCAL
2030 WRIGHT AVE.
RICHMOND CA Canada ☐ Hold for Pick Up ☐

Tariff Dest. | Gateway

Check to Shipper $

EMERY WORLDWIDE will accept Consignee's check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation.

Customer's Reference Numbers: W81241 PB213 W92-0-0011#20

Zip: 99352

Consignee's Account Number: E

Zip: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (in Lbs.)
1 COLEMAN U-01 COOLER SOIL SAMPLES B018P9 W92-0-0011#20	1				1	37

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

2509865303

Remarks: OVERNIGHT DELIVERY

Shipper's Signature X

Zip Ship ☐
For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used

Urgent Letter 9X12 ☒ Urgent Pack 12X15 ☒

International Shipments: Free Domicile ☐ Commodity Code

Third Party Account Number mandatory for Third Party Billing: E

Third Party Account Number

International Customs Value

International Insurance

Base Charge

Total Transportation Charges

Other Charges/Advance at Origin: ☐ OC/AO $

1 OAK A

Terms and Conditions on Back

PLEASE TYPE OR USE BALL POINT PEN. BEAR DOWN FIRMLY!
KEEP MARKS WITHIN BOXES TO ASSURE ACCURACY

FORM NO. 60001-46

9713506.0767

CONSIGNEE — PACKAGE COPY — 4

B018P9-TMA-106

00002

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 01-089

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : January 21, 1992

1.0 DESCRIPTION OF CASE :

One soil sample was analyzed for TCL Organics-Volatiles, Semivolatiles and Pesticide/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision 2/88.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX
B018J0	A2-01-089-01A	SV & P	SOIL
B018J0	A2-01-089-01B	V	SOIL
B018J0 MS	A2-01-089-01C	V	SOIL
B018J0 MSD	A2-01-089-01D	V	SOIL
B018J0 MS	A2-01-089-01E	SV & P	SOIL
B018J0 MSD	A2-01-089-01F	SV & P	SOIL

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL SOIL :

The samples were analyzed by heated purge and within the CLP SOW holding times. All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All of the BFB tunes are injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL SOIL :

The samples were extracted and analyzed within the CLP SOW holding times. All of the QC results were within the limits specified by the EPA CLP SOW.

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 2/10/92 and analyzed in accordance with the EPA CLP SOW.

During the sequence the computer program was interrupted causing it to stop collecting data from the data systems' storage box (interface box). This interface box can hold only a limited number of sample results after which it begins to overwrite previously stored files. Because of this the data files for the EVAL B standard analyzed at 5:57 on 2/11/92 (B21030 and A21030) and the data file for one sample injection (B21029 and A21029) analyzed at 5:17 on 2/11/92 were over written. The data for the injection made at 5:17 (B21029) was overwritten in the interface box by the injection made at 6:38. The data for the EVAL B injection made at 5:57 (B21030) was overwritten in the interface box by the injection made at 7:18. The EVAL B standard and the sample were set up and re-injected later in the sequence.

The sequence was interrupted after the injection made at 7:18 on 2/11/92 to determine what samples needed to be re-injected. Since the EVAL B had been overwritten, the injections that were made after IND A (B21024) and up to the injection made at 7:18 on 2/11/92 were re-injected. The sequence was restarted with the injection of IND A at 11:04 and IND B at 11:44 on 2/11/92. IND A and IND B were injected to assure that the system still met the Protocol criteria. EVAL B was then injected to resume the sequence.

IND A and IND B were injected consecutively in the sequence at 16:24 and 17:04 on 2/12/92. IND A (B21075) was used for quantitation. The IND B on the confirmation column had a calibration factor for Aldrin above the allowable 20% difference. There was some interference within the injection that co-eluted with Aldrin on the confirmation column but not on the primary column. Therefore, the calibration was still maintained. This standard is not used for quantitation.

SAMPLE NOTES :

LOW LEVEL SOIL :

The samples were extracted and analyzed within the CLP SOW holding times. All of the QC results were within the limits specified by the EPA CLP SOW. However, the confirmation column, though not used for quantitation, had a greater percent recovery for gamma-BHC in both the MS and MSD samples than the primary column. A positive interference may be responsible for raising the concentration of one polarity column versus another. The positive interference may be matrix interference which co-elutes on one column while giving complete resolution on the other. Or it is possible that a positive interference may be more apparent on one column of a certain polarity versus that of another polarity. At this time the exact cause for the difference between the two columns is not certain.

All of the QC results were with the limits specified by the EPA CLP SOW.

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth
CLP Program Manager

Dennis D. Wells
Technical Director

EPA SAMPLE NO.
VOLATILE ORGANICS ANALYSIS DATA SHEET

00005

B018J0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201089-01B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20123R11

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 4 Date Analyzed: 01/23/92

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	16	B
67-64-1	Acetone	27	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

9713508 0772

LE

00006 EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B018J0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201089-01B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20123R11

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 4 Date Analyzed: 01/23/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

00007
EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B018J0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201089-01A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 20131N09

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 4 dec. Date Extracted: 01/24/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

GPC Cleanup: (Y/N) N pH: 9.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
100-51-6	Benzyl Alcohol	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	bis(2-Chloroisopropyl)Ether	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
65-85-0	Benzoic Acid	1600	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	340	U
208-96-8	Acenaphthylene	340	U

9713506 0774

1C

00008
EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B018J0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201089-01A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 20131N09

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 4 dec. Date Extracted: 01/24/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

GPC Cleanup: (Y/N) N pH: 9.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	340	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	680	U
56-55-3	Benzo(a)anthracene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
218-01-9	Chrysene	340	U
117-84-0	Di-n-octyl Phthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

(1) - Cannot be separated from Diphenylamine

IF

00009
EPA SAMPLE NO.

B018J0

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201089-01A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 20131N09

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 4 dec. ____ Date Extracted: 01/24/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

GPC Cleanup: (Y/N) N pH: 9.9 Dilution Factor: 1.00

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN HYDROCARBON	2.23	380	J
2.		UNKNOWN ALCOHOL	2.38	930	BJ
3.		UNKNOWN ALCOHOL	2.85	20000	BJ
4.		UNKNOWN ALCOHOL	2.93	210	BJ
5.		UNKNOWN ALCOHOL	4.03	270	BJ
6.		UNKNOWN PHTHALATE	21.57	170	J

9713506.0776

ID

00010

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

B018J0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201089-01A

Sample wt/vol: 30.2 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 4 dec. Date Extracted: 01/23/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/12/92

GPC Cleanup: (Y/N) N pH: 9.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.3	U
319-85-7	beta-BHC	8.3	U
319-86-8	delta-BHC	8.3	U
58-89-9	gamma-BHC (Lindane)	8.3	U
76-44-8	Heptachlor	8.3	U
309-00-2	Aldrin	8.3	U
1024-57-3	Heptachlor epoxide	8.3	U
959-98-8	Endosulfan I	8.3	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	U
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	83	U
53494-70-5	Endrin ketone	17	U
5103-71-9	alpha-Chlordane	83	U
5103-74-2	gamma-Chlordane	83	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	83	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	83	U
53469-21-9	Aroclor-1242	83	U
12672-29-6	Aroclor-1248	83	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	170	U

EPA SAMPLE NO.

00040

VOLATILE ORGANICS ANALYSIS DATA SHEET

B018J0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201089-01B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20123R11

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 4 Date Analyzed: 01/23/92

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	16	B
67-64-1	Acetone	27	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

1E

00041
EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B018J0

ab Name: TMA/ARLI Contract: WHC

ab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

atrix: (soil/water) SOIL Lab Sample ID: A201089-01B

ample wt/vol: 5.0 (g/mL) G Lab File ID: 20123R11

evel: (low/med) LOW Date Received: 01/21/92

Moisture: not dec. 4 Date Analyzed: 01/23/92

olumn (pack/cap) PACK Dilution Factor: 1.0

umber TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

00117
EPA SAMPLE NO.

B018J0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201089-01A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 20131N09

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 4 dec. Date Extracted: 01/24/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

GPC Cleanup: (Y/N) N pH: 9.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
100-51-6	Benzyl Alcohol	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	bis(2-Chloroisopropyl)Ether	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
65-85-0	Benzoic Acid	1600	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	340	U
208-96-8	Acenaphthylene	340	U

00118
EPA SAMPLE NO.

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B018J0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201089-01A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 20131N09

Level: (low/med) LOW Date Received: 01/21/92

Moisture: not dec. 4 dec. Date Extracted: 01/24/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

GPC Cleanup: (Y/N) N pH: 9.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	340	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	680	U
56-55-3	Benzo(a)anthracene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
218-01-9	Chrysene	340	U
117-84-0	Di-n-octyl Phthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

(1) - Cannot be separated from Diphenylamine

9713506.0781

00119
EPA SAMPLE NO.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B018J0

ab Name: TMA/ARLI Contract: WHC

ab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

atrix: (soil/water) SOIL Lab Sample ID: A201089-01A

ample wt/vol: 30.3 (g/mL) G Lab File ID: 20131N09

evel: (low/med) LOW Date Received: 01/21/92

Moisture: not dec. 4 dec. Date Extracted: 01/24/92

xtraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

PC Cleanup: (Y/N) N pH: 9.9 Dilution Factor: 1.00

umber TICs found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	2.23	380	J
2.	UNKNOWN ALCOHOL	2.38	930	BJ
3.	UNKNOWN ALCOHOL	2.85	20000	BJ
4.	UNKNOWN ALCOHOL	2.93	210	BJ
5.	UNKNOWN ALCOHOL	4.03	270	BJ
6.	UNKNOWN PHTHALATE	21.57	170	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

00231
EPA SAMPLE NO.

B018J0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01089 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201089-01A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 4 dec. __ Date Extracted: 01/23/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/12/92

GPC Cleanup: (Y/N) N pH: 9.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.3	U
319-85-7	beta-BHC	8.3	U
319-86-8	delta-BHC	8.3	U
58-89-9	gamma-BHC (Lindane)	8.3	U
76-44-8	Heptachlor	8.3	U
309-00-2	Aldrin	8.3	U
1024-57-3	Heptachlor epoxide	8.3	U
959-98-8	Endosulfan I	8.3	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	U
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	83	U
53494-70-5	Endrin ketone	17	U
5103-71-9	alpha-Chlordane	83	U
5103-74-2	gamma-Chlordane	83	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	83	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	83	U
53469-21-9	Aroclor-1242	83	U
12672-29-6	Aroclor-1248	83	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	170	U

9713508.0783

Westinghouse Hanford Company

CHAIN OF CUSTODY ARL1

Custody Form Initiator CM Chance

Company Contact J.D. Fancher Telephone (509) 376-2081

Project Designation/Sampling Locations 100 DR-1 Vadose Zone Sampling Collection Date 1-15-92

BH 116-DR-9A

Ice Chest No. SML-99 Field Logbook No. WHC-N-560

Bill of Lading/Airbill No Offsite Property No. W92-0-0011*

Method of Shipment Overnight Air Delivery

Shipped to TMA/NORCAL 2030 Wright Ave. Richmond Ca. 94804

Possible Sample Hazards/Remarks Maintain at 4°C

Sample Identification

BC18J0

~~Gross Alpha/Beta, Gamma Spec, Alpha Spec~~

~~(1) 1000ml G bottle(Radiochemistry~~, Sr-90, C-14, Tc-99)

(1) 250ml G bottle(ICP/AA metals, Hg)

~~(1) 250ml aG bottle(Semi-VOA, PCB's/PEST.)~~

(1) 125ml G bottle(Cyanide)

~~(1) 125ml G bottle(VOA)~~

~~(1) 1000ml G bottle(Radiochemistry, Sr-90, C-14, Tc-99)~~

~~(1) 250ml G bottle(ICP/AA metals, Hg)~~

~~(1) 250ml aG bottle(Semi-VOA, PCB's/PEST.)~~

~~(1) 125ml G bottle(Cyanide)~~

~~(1) 125ml G bottle(VOA)~~

☐ Field Transfer of Custody — CHAIN OF POSSESSION (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
CMChance / Cory Chance	Kermit Blum	1-21-92 1115
Kermit Blum 1-21-92	T Bernard	1/22/92 1000

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

9213506.0784

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector C M Chance Date Sampled 1-15-92 Time 0920 hours

Company Contact J.D. Fancher Telephone (509) 376-2081

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
	~~1-1000ml glass~~	~~Soil~~	~~Gross alpha/beta,Gamma Spec.~~ Alpha Spec. ~~,Sr-90,Tc-99,C-14~~
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
0184J0	~~1-250ml amber glass~~	~~Soil~~	~~Semi-VOA,PCB's/PEST.(CLP)~~
	1-125ml glass	Soil	Cyanide(CLP)
	~~1-125ml glass~~	~~Soil~~	~~VOA(CLP)~~
	1-1000ml glass	Soil	Gross alpha/beta,Gamma Spec.Sr-90,Tc-99,C-14
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
	1-250ml glass amber	Soil	Semi-VOA,PCB's/PEST.(CLP)
	1-125ml glass	Soil	Cyanide(CLP)
	1-125ml glass	Soil	VOA(CLP)

ld Information** _____

_____

_____

ecial Handling and/or Storage _____

_____

sible Sample Hazards _____

_____

PART II: LABORATORY SECTION

eived by Kermit Blum Title Sample Control Supervisor Date 1-21-92

alysis Required _____

dicate whether sample is soil, sludge, water, etc.

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B018J0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-01-165SAS No.: SDG No.: B018J0

Matrix (soil/water): SOIL Lab Sample ID: 01152-01S

Level (low/med): LOW Date Received: 01/22/92

% Solids: 91.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5620.00			P
7440-36-0	Antimony	1.70	U	N	P
7440-38-2	Arsenic	3.00			F
7440-39-3	Barium	60.20		E	P
7440-41-7	Beryllium	0.21	U		P
7440-43-9	Cadmium	0.21	U		P
7440-70-2	Calcium	7500.00			P
7440-47-3	Chromium	10.80			P
7440-48-4	Cobalt	8.60	B		P
7440-50-8	Copper	24.20			P
7439-89-6	Iron	15800.00			P
7439-92-1	Lead	3.40			F
7439-95-4	Magnesium	4710.00			P
7439-96-5	Manganese	302.00		N	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	11.70			P
7440-09-7	Potassium	825.00	B		P
7782-49-2	Selenium	0.81	U	W	F
7440-22-4	Silver	0.42	U		P
7440-23-5	Sodium	133.00	B		P
7440-28-0	Thallium	0.41	U		F
7440-62-2	Vanadium	34.80			P
7440-66-6	Zinc	35.40			P
	Cyanide	5.50	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

002

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B018P9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-01-165SAS No.: SDG No.: B018J0

Matrix (soil/water): SOIL Lab Sample ID: 01152-02S

Level (low/med): LOW Date Received: 01/22/92

% Solids: 96.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3610.00			P
7440-36-0	Antimony	1.50	U	N	P
7440-38-2	Arsenic	1.30	B		F
7440-39-3	Barium	67.40		E	P
7440-41-7	Beryllium	0.38	B		P
7440-43-9	Cadmium	0.19	U		P
7440-70-2	Calcium	2560.00			P
7440-47-3	Chromium	11.00			P
7440-48-4	Cobalt	3.30	B		P
7440-50-8	Copper	10.50			P
7439-89-6	Iron	6620.00			P
7439-92-1	Lead	2.30			F
7439-95-4	Magnesium	2920.00			P
7439-96-5	Manganese	432.00		N	P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	17.10			P
7440-09-7	Potassium	663.00	B		P
7782-49-2	Selenium	0.81	U		F
7440-22-4	Silver	0.38	U		P
7440-23-5	Sodium	129.00	B		P
7440-28-0	Thallium	0.41	U		F
7440-62-2	Vanadium	12.70			P
7440-66-6	Zinc	16.90			P
_____	Cyanide	5.00	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

TMA/Skinner & Serman Labs SAMPLE LOG-IN
WORKORDER 52-01-152 CLIENT HANFORD-NOR No. SAMPLES:
PROTCL CLP TURNARND 33 days 2
COOLER TEMP: 4 oC, or NA (Soil) (Water) (Specify Other)
CUSTODIAN A. Bennett SDG/BATCH N/A
CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N2-01-165
SHIPER & # Fedex 141445250 4 PO/CONTRACT# ↓
TAGS: PRESENT/ABSENT/~~NA~~/SEE COC CONTACT Dolores Sanchez
CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: NONE

SAMPLE CONTAINERS-INTACT/BROKEN COMMENTS

CLIENT COMMENT? YES/NO
SAMPLE LABELS AGREE WITH CHAIN OF CUSTODY INFO? YES/NO (COMMENT)
CLIENT PAPERWORK AGREES WITH SAMPLES & COC? YES /NO (COMMENT)

SHIPMENT DATES 1/22/92
LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

N/A

	CLIENT ID	MATRIX	RECEIVED	QC	TEST(S)	HOLD TIME UP
1	B018J0	SOIL	01/22/92	D,S	TM/CN	
2	↓ P9	↓	↓		↓	CN due 01/29/92
3						
4						
5						Hg due 02/07/92
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						

Complete 01/22/92 AB

SUBCONTRACT: YES/NO, TO: DATE:
REVIEWED Rev. 1.4 PAGE

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 1414452406

1275M 1414452406

RECIPIENT'S COPY

Date 1-21-92

From (Your Name) Please Print: Sample Control

Your Phone Number (Very Important): (510) 235-2633

Company: T H A /NORCAL

Department/Floor No.:

Street Address: 2030 WRIGHT AVE

City: RICHMOND **State:** CA **ZIP Required:** 94804

To (Recipient's Name) Please Print: Sample Control

Recipient's Phone Number (Very Important): (617) 890-7200

Company: Skinner & Sherman

Department/Floor No.:

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 300 Second Ave

City: Waltham **State:** MA **ZIP Required:** 02254

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2320 6406

IF HOLD FOR PICK-UP, Print FEDEX Address Here

Street Address:

City: State: ZIP Required:

PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)		**Standard Overnight** (Delivery by next business afternoon†)	
11	[X] YOUR PACKAGING	51	[ ] YOUR PACKAGING
16	[ ] FEDEX LETTER *	56	[ ] FEDEX LETTER *
12	[ ] FEDEX PAK *	52	[ ] FEDEX PAK *
13	[ ] FEDEX BOX	53	[ ] FEDEX BOX
14	[ ] FEDEX TUBE	54	[ ] FEDEX TUBE
Economy Two-Day (Delivery by second business day†)		**Government Overnight** (Restricted to authorized users only)	
30	[ ] ECONOMY	46	[ ] GOVT LETTER
		41	[ ] GOVT PACKAGE

Freight Service (for Extra Large or any package over 150 lbs.)

70 [ ] OVERNIGHT FREIGHT ** (Centered reservation required) 80 [ ] TWO-DAY FREIGHT **

† Delivery commitment may be later in some areas. * Declared Value Limit $100. ** Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)

1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) [ ] (Not available to all locations)
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
8 [ ] DRY ICE ____ Lbs.
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra Charge)
10 [ ]
11 [ ]
12 [ ] HOLIDAY DELIVERY (Where offered) (Extra charge)

6

	PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE
	1	24	
Total	1	24	Total

DIM SHIPMENT (Chargeable Weight) [ ] ____ lbs. ____ x ____ x ____ = ____

Received At: 1 [ ] Regular Stop 2 [ ] On-Call Stop 3 [ ] Drop Box 4 [ ] BSO 5 [ ] Station

7 Release Signature:

FedEx Emp. No. Date/Time

Emp. No. Date

[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Det. [ ] Chg. To Hold

Street Address

City State Zip

Received By: X

Date/Time Received: 1/22/92 9:30 FedEx Employee Number

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 6/91
PART #137204 FXEM 9/91
FORMAT #099

099

123

Westinghouse Hanford Company

9713506.0789

CHAIN OF CUSTODY

S&S

Custody Form Initiator CM Chance

Company Contact J.D. Fancher

Telephone (509)376-2081

Project Designation/Sampling Locations 100 ~~DR 1 Vadose~~ HR-3 GW Zone Sampling

Collection Date 1-16-92

BH 199-D5-14

Ice Chest No. U-01

Field Logbook No. WHC-N-588 D

Bill of Lading/Airbill No.

Offsite Property No.

Method of Shipment Overnight Air Delivery

Shipped to TMA/NORCAL 2030 Wright Ave. Richmond Ca. 94804

Possible Sample Hazards/Remarks Maintain at 4° C

Sample Identification

B018P9

~~(1)1000ml G bottle(Radiochemistry,Sr-90, C-14,Tc-99)~~	(1)1000ml G bottle(Radiochemistry, Sr-90, C-14,Tc-99)
(1) 250ml G bottle(ICP/AA metals,Hg)	(1) 250ml G bottle(ICP/AA metals, Hg)
~~(1) 250ml aG bottle(Semi-VOA,PCB's/PEST.)~~	(1) 250ml aG bottle(Semi-VOA,PCB's/PEST.)
(1) 125ml G bottle(Cyanide)	(1) 125ml G bottle(Cyanide)
~~(1) 125ml G bottle(VOA)~~	(1) 125ml G bottle(VOA)

☐ Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
CM Chance Cory Chance	Kermit Blum	1-21-92 1115
Relinquished by: 1-21-92 Kermit Blum	Received by:	Date/Time: 1/22/92 9:30
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: 124

A-6000-407 (12/90)

9713506.0790

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector C M Chance Date Sampled 1-16-92 Time 0906 hours

Company Contact J.D. Fancher Telephone (509) 376-2081

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
	~~1-1000ml glass~~	~~Soil~~	~~Gross alpha/beta,Gamma Spec.,Sr-90,Tc-99,C-14~~ AlphaSpec
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
B01899	~~1-250ml amber glass~~	~~Soil~~	~~Semi-VOA,PCB's/PEST.(CLP)~~
	1-125ml glass	Soil	Cyanide(CLP)
	~~1-125ml glass~~	~~Soil~~	~~VOA(CLP)~~
	1-1000ml glass	Soil	Gross alpha/beta,Gamma Spec.Sr-90,Tc-99,C-14
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
	1-250ml glass amber	Soil	Semi-VOA,PCB's/PEST.(CLP)
	1-125ml glass	Soil	Cyanide(CLP)
	1-125ml glass	Soil	VOA(CLP)

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 1-21-92

Analysis Required 125

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406 (05/90)

Westinghouse Hanford Company 9713506.0791

CHAIN OF CUSTODY S&S

Custody Form Initiator CM Chance

Company Contact J.D. Fancher Telephone (509) 376-2081

Project Designation/Sampling Locations 100 DR-1 Vadose Zone Sampling Collection Date 1-15-92

BH 116-DR-9A

Ice Chest No. SML-99 Field Logbook No. WHC-N-560

Bill of Lading/Airbill No. Offsite Property No. W92-0-0011*

Method of Shipment Overnight Air Delivery

Shipped to TMA/NORCAL 2030 Wright Ave. Richmond Ca. 94804

Possible Sample Hazards/Remarks Maintain at 4°C

Sample Identification

B018J0

~~(1)1000ml G bottle(Radiochemistry, Sr-90, C-14, Tc-99)~~ Gross Alpha/Beta, Gamma Spec. Alpha Spec	(1)1000ml G bottle(Radiochemistry, Sr-90, C-14, Tc-99)
(1) 250ml G bottle(ICP/AA metals, Hg)	(1) 250ml G bottle(ICP/AA metals, Hg)
~~(1) 250ml aG bottle(Semi-VOA, PCB's/PEST.)~~	(1) 250ml aG bottle(Semi-VOA, PCB's/PEST.)
(1) 125ml G bottle(Cyanide)	(1) 125ml G bottle(Cyanide)
~~(1) 125ml G bottle(VOA)~~	(1) 125ml G bottle(VOA)

☐ Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
CM Chance	Kermit Blum	1-21-92 1115
Kermit Blum 1-21-92		1/22/92 9:30

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: #26

A-6000-407 (12/90)

9213506.0792

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector C M Chance Date Sampled 1-15-92 Time 0920 hours

Company Contact J.D. Fancher Telephone (509) 376-2081

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
	~~1-1000ml glass~~	~~Soil~~	~~Gross alpha/beta,Gamma Spec.~~ Alpha Spec ~~,Sr-90,Tc-99,C-14~~
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
B018J0	~~1-250ml amber glass~~	~~Soil~~	~~Semi-VOA,PCB's/PEST.(CLP)~~
	1-125ml glass	Soil	Cyanide(CLP)
	~~1-125ml glass~~	~~Soil~~	~~VOA(CLP)~~
	1-1000ml glass	Soil	Gross alpha/beta,Gamma Spec.Sr-90,Tc-99,C-14
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
	1-250ml glass amber	Soil	Semi-VOA,PCB's/PEST.(CLP)
	1-125ml glass	Soil	Cyanide(CLP)
	1-125ml glass	Soil	VOA(CLP)

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 1-21-92

Analysis Required _____

127

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406 (05/90)

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 01-095

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : January 23, 1992

1.0 DESCRIPTION OF CASE :

One soil sample was analyzed for TCL Organics-Volatiles, Semivolatiles and Pesticide/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision 2/88.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX
B018T5	A2-01-095-01A	P & SV	SOIL
B018T5 MS	A2-01-095-01B	P & SV	SOIL
B018T5 MSD	A2-01-095-01C	P & SV	SOIL
B018T5	A2-01-095-01E	V	SOIL
B018T5 MS	A2-01-095-01F	V	SOIL
B018T5 MSD	A2-01-095-01G	V	SOIL

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL SOIL :

The samples were analyzed by heated purge outside of the CLP SOW holding times. All of the other QC results were within limits specified by the EPA CLP SOW.

TUNES :

All of the BFB tunes are injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL SOIL :

The samples were extracted and analyzed within the CLP SOW holding times. Samples were received on 1/21/92. However, since there was no activity report submitted until 1/23/92, the VTSR used was 1/23/92. See ROD# 92-00043. All of the other QC results were within the limits specified by the EPA CLP SOW.

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 2/10/92 and analyzed in accordance with the EPA CLP SOW.

During the sequence the computer program was interrupted causing it to stop collecting data from the data systems' storage box (interface box). This interface box can hold only a limited number of sample results after which it begins to overwrite previously stored files. Because of this the data files for the EVAL B standard analyzed at 5:57 on 2/11/92 (B21030 and A21030) and the data file for one sample injection (B21029 and A21029) analyzed at 5:17 on 2/11/92 were over written. The data for the injection made at 5:17 (B21029) was overwritten in the interface box by the injection made at 6:38. The data for the EVAL B injection made at 5:57 (B21030) was overwritten in the interface box by the injection made at 7:18. The EVAL B standard and the sample were set up and re-injected later in the sequence.

The sequence was interrupted after the injection made at 7:18 on 2/11/92 to determine what samples needed to be re-injected. Since the EVAL B had been overwritten, the injections that were made after IND A (B21024) and up to the injection made at 7:18 on 2/11/92 were re-injected. The sequence was restarted with the injection of IND A at 11:04 and IND B at 11:44 on 2/11/92. IND A and IND B were injected to assure that the system still met the Protocol criteria. EVAL B was then injected to resume the sequence.

IND A and IND B were injected consecutively in the sequence at 16:24 and 17:04 on 2/12/92. IND A (B21075) was used for quantitation. The IND B on the confirmation column had a calibration factor for Aldrin above the allowable 20% difference. There was some interference within the injection that co-eluted with Aldrin on the confirmation column but not on the primary column. Therefore, the calibration was still maintained. This standard is not used for quantitation.

SAMPLE NOTES :

LOW LEVEL SOIL :

The samples were extracted and analyzed within the CLP SOW holding times. The MS and MSD samples had spike recoveries above the QC limit for gamma-BHC, Dieldrin, 4,4'-DDT and Heptachlor (MS only). The spiking solution was verified to have been correctly prepared. Since the QC limits are advisory, no further action was taken.

All of the other QC results were with the limits specified by the EPA CLP SOW.

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth
CLP Program Manager

Dennis D. Wells
Technical Director

9713506.0796

00005

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B018T5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01095 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201095-01E

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20205R10

Level: (low/med) LOW Date Received: 01/23/92

% Moisture: not dec. 7 Date Analyzed: 02/05/92

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	17	B
67-64-1	Acetone	8	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	2	J
10061-02-6	trans-1,3-Dichloropropene	5	U
110-75-8	2-Chloroethyl vinyl ether	11	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

1E

00006

EPA SAMPLE NO.

B018T5

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01095 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201095-01E

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20205R10

Level: (low/med) LOW Date Received: 01/23/92

% Moisture: not dec. 7 Date Analyzed: 02/05/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

00007 ALH

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B018T5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01095 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201095-01A

Sample wt/vol: 30.1 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/23/92

% Moisture: not dec. 7 dec. Date Extracted: 01/31/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/12/92

GPC Cleanup: (Y/N) N pH: 10.2 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.6	U
319-85-7	beta-BHC	8.6	U
319-86-8	delta-BHC	8.6	U
58-89-9	gamma-BHC (Lindane)	8.6	U
76-44-8	Heptachlor	8.6	U
309-00-2	Aldrin	8.6	U
1024-57-3	Heptachlor epoxide	8.6	U
959-98-8	Endosulfan I	8.6	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	U
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	86	U
53494-70-5	Endrin ketone	17	U
5103-71-9	alpha-Chlordane	86	U
5103-74-2	gamma-Chlordane	86	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	86	U
11104-28-2	Aroclor-1221	86	U
11141-16-5	Aroclor-1232	86	U
53469-21-9	Aroclor-1242	86	U
12672-29-6	Aroclor-1248	86	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	170	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B018T5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01095 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201095-01A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 20204N10

Level: (low/med) LOW Date Received: 01/23/92

% Moisture: not dec. 7 dec. Date Extracted: 02/03/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 10.2 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
100-51-6	Benzyl Alcohol	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	bis(2-Chloroisopropyl)Ether	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
65-85-0	Benzoic Acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethyl Phthalate	350	U
208-96-8	Acenaphthylene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B018T5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01095 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201095-01A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 20204N10

Level: (low/med) LOW Date Received: 01/23/92

% Moisture: not dec. 7 dec. Date Extracted: 02/03/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 10.2 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
84-74-2	Di-n-Butylphthalate	230	BJ
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	700	U
56-55-3	Benzo(a)anthracene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U
218-01-9	Chrysene	350	U
117-84-0	Di-n-octyl Phthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

00010 ALH

1F

EPA SAMPLE NO.

B018T5

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01095 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201095-01A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 20204N10

Level: (low/med) LOW Date Received: 01/23/92

% Moisture: not dec. 7 dec. Date Extracted: 02/03/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 10.2 Dilution Factor: 1.00

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN HYDROCARBON	2.22	350	J
2.		UNKNOWN ALCOHOL	2.45	2300	BJ
3.		UNKNOWN ALKANE	2.58	250	BJ
4.		UNKNOWN ALCOHOL	2.88	32000	BJ
5.		UNKNOWN ALKANE	3.07	250	BJ
6.		UNKNOWN ALKANE	3.18	140	BJ
7.		UNKNOWN HYDROCARBON	4.02	350	J
8.		UNKNOWN HYDROCARBON	4.32	2200	J
9.		UNKNOWN HYDROCARBON	6.87	140	J
10.		UNKNOWN KETONE	7.20	210	J
11.		UNKNOWN CARBOXYLIC ACID ESTE	28.47	27000	BJ
12.		UNKNOWN POLYAROMATIC HYDROCA	35.89	210	J
13.		UNKNOWN HYDROCARBON	37.02	210	J
14.		UNKNOWN HYDROCARBON	38.37	210	J
15.		UNKNOWN HYDROCARBON	39.21	140	J

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

GENERAL CHEMISTRY
CASE NO. 01-095
(TMA/ARLI Work Order # A2-01-095)

ORGANICS
CASE NO. 01-095
(TMA/ARLI Work Order # A2-01-095)

TCLP FULL ANALYSIS
CASE NO. 01-095
(TMA/ARLI Work Order # A2-01-095)

General Chemistry, Organics and TCLP Full Analysis results are presented for the following WHC SOIL samples(s):

B018T5
B018T3
B018T4
B018T6
B018T7
B018T8

Norcal Work Order # N2-01-180

Thermo Analytical Inc.
160 Taylor Street
Monrovia, Ca. 91016
818-357-3247

9213506 0803

000002

Westinghouse Hanford Company	CHAIN OF CUSTODY ARL1

Custody Form Initiator C. E. HEIDEN (509)

Company Contact MIKE STANKOVICH Telephone 376-2493

Project Designation/Sampling Locations 91-93 100-DR-1 Collection Date 1-15-92

SODIUM DICHROMATE TANK SOIL SAMPLING

Ice Chest No. RM #43 Field Logbook No. WHC-N-429-1

Bill of Lading/Airbill No. 250986525 9 Offsite Property No. ~~W92-0-023-29~~

Method of Shipment EMERY

Shipped to TMA/NORCAL RICHMOND, CA.

Possible Sample Hazards/Remarks N/A

Sample Identification

B018T5	SOIL	1 x ~~2~~ 1000 ML 1 x ~~3~~ 4 - 250 ML CH 1/15/92 1 - 120 ML + ~~60 ML~~	
B018T3	SOIL	1 - 250 ML	
B018T4	SOIL	1 - 250 ML	
B018T6	SOIL	1 - 250 ML	
B018T7	SOIL	1 - 250 ML	
B018T8	SOIL	1 - 250 ML	

Field Transfer of Custody	CHAIN OF POSSESSION	(Sign and Print Names)
Relinquished by: C.E. Heiden C.E. Heiden	Received by: Kermit Blum	Date/Time: 1-21-92 1130
Relinquished by: 1-23-92 Kermit Blum	Received by: C. Harris	Date/Time: 1/24/92 10 AM
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

9713506.0804 THA/NORCAL

000003

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector F.W. Gustafson Date Sampled 01/15/92 Time ____ hours

Company Contact Mike Stankevich Telephone (509) 376-2493

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested	Method	
B018T5	2-1000ml 1-120ml 1-250ml 1-60ml	Soil	~~ICP/AA Metals~~	6010	~~250 ml~~
			~~and Hg~~	7470	
B018T3	1-250ml	Soil	~~Cyanide~~	~~9010~~	~~250 ml~~
B018T4	↑	↑	VOA	8240	120 ml
B018T6			Semi-VOA	8270	
B018T7	↓	↓	PCB's/Pesticides	8080	1000 ml
B018T8	1-250ml	Soil	Anions (IC)	EPA 300.0	
			~~Carbon 14~~	~~LAB SOP~~	~~60 ml~~
			~~Strontium-90~~	LAB SOP	
			U-235		
			U-238/239		
			Pu-239/240		
			Gross Alpha		1000 ml
			Gross Beta		
			Gamma Spec		
			Am-241	LAB SOP	
			TCLP	1311	250 ml
			NOTE: Sample #'s B018T3, B018T4 B018T6, B018T7, B018T8 to be analyzed for TCLP (Method 1311) only. (1-250 ml jars)		

Field Information** —

Special Handling and/or Storage —

Possible Sample Hazards —

PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 1-21-92

Analysis Required ____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406 (05/90)

9713506.0805

000004

TMA/ARLI
Thermo Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 1-4/92 COMPANY [illegible] (WHC) OTHER ORD # 14/454833 2.

Surveyor's Name [illegible]

Model No. HP-210 / ESP-1 Model No. AC-3-7 / ESP-1

Serial Nos. 710289 / 02619 Serial Nos. 407726 / 02628

Calibration Date 3/25/91 Calibration Date 11/15/91

Instrument Calibration Factor 0.284 Instrument Calibration Factor 0.177.

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-3-7 CPM	AC-3-7 Factor	AC-3-7 DPM	Spillage or Breakage?	Activity, nCi/mL or nCi/g
Background		33.0			0.0				
Consistency		7450	0.2874		5120	0.1882			
Smears:		28.0			1.0			None	
Reported:	WHC	6 Samples, each <50 pCi/g							

OK AWK 1/24/92.

TMA/ARLI

PROCESSING EPA/CLP SAMPLES

SCP-6-1
Rev. No. 01
Rev. Date: 4/1/91
Page No. _____

FIGURE 1

SAMPLE CUSTODIAN SIGNATURE: C. Harris, Date 1/24/92

DOCUMENT CONTROL # _____

CIRCLE THE APPROPIATE RESPONSE

- o Container Condition — intact/not intact
- o Custody Seal: ice chest — present/absent; intact/not intact
  samples — present/absent; intact/not intact
- o Chain-of-Custody — present/absent
- o Sample Tags — present/absent
  Sample Tag Numbers — listed/not listed on chain of custody
- o SMO Forms — present/absent

CASE NUMBER AA 01-095

AIRBILL NUMBER 141548332

DATE	TIME RECEIVED	CHAIN-OF-CUSTODY RECORD NUMBER	SMO SAMPLE NUMBERS	CORRESPONDING		DOES INFORMATION OF CUSTODY RECORDS, TRAFFIC REPORTS, AND SAMPLE TAGS AGREE?	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
				SAMPLE TAG NUMBERS	ASSIGNED LAB NUMBERS		

RECORD OF DISPOSITION ROD-92-00043

DATE: 1/23/92 | LABORATORY: TMA | 100-HR-1 91-093

SAMPLE IDENTIFICATION NUMBERS

B018T3	B018T7			
B018T4	B018T8			
B018T5	B018T9			
B018T6				

DISPOSITION OF SAMPLES

☐ CANCELLED (REASON) _____

☐ DAMAGED SAMPLE CONTAINER. ANALYSIS CANCELLED

☐ BROKEN GLASS CONTAMINATING SAMPLE. ANALYSIS CANCELLED

☒ OTHER TOTAL ACTIVITY REPORTS WERE NOT SENT WITH SAMPLES TO TMA. TOTAL ACTIVITY REPORT supplied by Mike Stankovich on 1/22/92.

APPROVED Daniel L. Edwards 1/23/92
PROJECT COORDINATOR DATE

TECHNICAL REPRESENTATIVE DATE

000007

RECORD OF DISPOSITION

PROJECT 91-93/100-DR-1 ROD-92-00051

DATE: 2/5/92 | LABORATORY: TMA

SAMPLE IDENTIFICATION NUMBERS

B018T3	B018T8			
B018T4	B018T9			
B018T6	B018T5			
B018T7				

DISPOSITION OF SAMPLES

☐ CANCELLED (REASON) _____

☐ DAMAGED SAMPLE CONTAINER. ANALYSIS CANCELLED

☐ BROKEN GLASS CONTAMINATING SAMPLE. ANALYSIS CANCELLED.

X OTHER ABOVE SAMPLES ALIQUOTS WERE NOT LABELED WITH SPECIFIC ANALYSIS REQUESTED FOR EACH. LAB SORTED FOR CORRECT ALIQUOT WITH ANALYSIS. PROCEED WITH ANALYSIS PER MIKE STANKOVICH.

RECEIVED
FEB 18 1992

APPROVED Nancy O Seguin 2-6-92
PROJECT COORDINATOR DATE

TECHNICAL REPRESENTATIVE 2/10/92 DATE

9213506-0808

Post-it™ brand fax transmittal memo 7671 | # of pages ▸

To Lisa	From Lan
Co.	Co.
Dept.	Phone #
Fax #	Fax #

Thermo Analytical Inc.

CHAIN-OF-CUSTODY NON-CONFORMANCE NOTIFICATION FORM

WESTINGHOUSE HANFORD COMPANY
P.O.#: MBH-SVV-069262

Serial Number: 17 **Date:** 1-20-92

Samples Received: 1-20-92 **Fax #:** 11

Project/Location: 91-93 100 DR-1

DESCRIPTION:

Samples B018T5, B018T3, B018T4, B018T6, B018T7 and B018T8 received today. Sample bottles did not specify the analysis required. Please advise.

RESOLUTION:

Response Required Yes [✓] No [ ]

9713506.0810

000009

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE

AIRBILL PACKAGE TRACKING NUMBER 1414548332

1275M 1414548332

RECIPIENT'S COPY

1 Date: 1-23-92

From (Your Name) Please Print: SAMPLE CONTROL
Your Phone Number (Very important): (213)235-2637
Company: T M A /NORCAL
Department/Floor No:
Street Address: 2030 WRIGHT AVE
City: RICHMOND State: CA ZIP Required: 9 4 8 0 4

2 To (Recipient's Name) Please Print: SAMPLE CONTROL
Recipient's Phone Number (Very important):
Company: T M A / ARLI
Department/Floor No:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes): 160 TAYLOR STREET
City: MONROVIA State: CA ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice): 2320-64C6

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

3 PAYMENT: 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct No 3 [ ] Bill 3rd Party FedEx Acct No 4 [ ] Bill Credit Card
[ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight
- 11 [X] YOUR PACKAGING
- 16 [ ] FEDEX LETTER *
- 12 [ ] FEDEX PAK *
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight
- 51 [ ] YOUR PACKAGING
- 56 [ ] FEDEX LETTER *
- 52 [ ] FEDEX PAK *
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Two-Day
- 30 [X] ECONOMY

Government Overnight
- 46 [ ] GOVT LETTER
- 41 [ ] GOVT PACKAGE

Freight Service
- 70 [ ] OVERNIGHT FREIGHT **
- 80 [ ] TWO-DAY FREIGHT **

*Declared Value Limit $100
**Call for delivery schedule

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (If no Box #)
- 2 [X] DELIVER WEEKDAY
- 3 [ ] DELIVER SATURDAY (Extra charge) (Not available to all locations)
- 4 [ ] DANGEROUS GOODS (Extra charge)
- 5 [ ]
- 6 [ ] DRY ICE ____ Lbs.
- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP (Extra charge)
- 10 [ ]
- 11 [ ]
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6 PACKAGES | WEIGHT in Pounds | YOUR DECLARED VALUE
1 | 1.25
Total | Total | Total
1 | 25

DIM SHIPMENT (Chargeable Weight)
[ ] ____ lbs
L x W x H = ____

7 Received At:
1 [X] Regular Stop 3 [ ] Drop Box
2 [ ] On-Call Stop 4 [ ] BSC
5 [ ] Station

Emp No | Date
[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg To Del [ ] Chg To Hold
Street Address
City | State | Zip
Received By: X
Date/Time Received | FedEx Employee Number
Release Signature
FedEx Emp No | Date/Time

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 6/91
PART #137204 FXEM 9/91
FORMAT #099
099
© 1990 91 FEC
PRINTED IN U.S.A.

GENERAL CHEMISTRY RESULTS

CASE NO. 01-095

Soil Sample #:

B018T5

CASE NARRATIVE

No problems were encountered during sample analysis.
All QC results were acceptable.

Dennis D. Wells, Project Manager

TMA Inc. REPORT

Work Order # A2-01-095

Received: 01/24/92 05/13/92 15:27:42 Work Not Complete

REPORT TO: Westinghouse Hanford Company
2355 Stevens Dr.
Richland,WA.99352
MO-346/200 West/T6-08
ATTEN Jeanette Duncan

CLIENT WHC SAMPLES 9
COMPANY Westinghouse Hanford Company
FACILITY

WORK ID 91-93 100-DR-1
TAKEN By Westinghouse Staff
TRANS Federal Express
TYPE Soil
P.O. # N2-01-180-SU-AR
INVOICE under separate cover

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN Ms. Carole Harris
PHONE 818-357-3247

CERTIFIED BY

CONTACT DDW

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

SAMPLE IDENTIFICATION

1	B018T5
1	B018T5 MS
1	B018T5 MSD
1	B018T5 Duplicate
1	B018T5
1	B018T5 MS
1	B018T5 MSD
1	B018T5
2	B018T3
3	B018T4
4	B018T6
4	B018T6 MS
4	B018T6 Duplicate
5	B018T7
5	B018T7 Duplicate
6	B018T8
6	B018T8 MS
7	Blank
7	TBLK0205
7	0206TCLP Blank
7	TBLK0206
8	Blank Summary-TCLP Metals
8	Blank Summary-TCLP Pest.
8	Blank Summary-TCLP Herb.
8	Blank Summary-TCLP VOA
8	Blank Summary-TCLP SEMIVOA

TEST CODES and NAMES used on this workorder

AS SED	As/Se Digestion
BLKSUM	Method Blank Summary
BNCLPS	CLP Semivol. Soils - WH016
CL S	Chloride in Solids
F S	Fluoride in Solids
HG P	Hg Digestion
IC AN	Anions Extraction Solids
MOIST	Moisture
MPREPW	Metals Prep. - Liquid
NO2 S	Nitrite (Solids)
NO3 S	Nitrate (solids)
PECLPS	CLP Pest\PCBs Soil - WH015
PH SOL	pH of Solids
PO4 S	Phosphate in Solids
SO4 S	Sulfate (in Solids)
TCH1	TCLP Herbicides Form 1
TCH3	TCLP Herbicides Form 3
TCH3D	TCLP Herbicides Form 3D
TCLPX	OLD CODE - DO NOT USE
TCLPZ	OLD CODE - DO NOT USE
TCM1	TCLP Metals Form 1
TCM2	TCLP Metals Form 2
TCM3	TCLP Metals Form 3
TCM5	TCLP Metals Form 5
TCM6	TCLP Metals Form 6
TCP1	TCLP Pesticides Form 1
TCP3	TCLP Pesticides Form 3
TCP3D	TCLP Pesticides From 3D
TCS1	TCLP Semi-Volatiles Form 1
TCS3	TCLP Semi-Volatiles Form 3
TCS3D	TCLP Semivolatiles Form 3D
TCV1	TCLP Volatiles Form 1
TCV3	TCLP Volatiles Form 3
TCV3D	TCLP Volatiles Form 3D
VOCLPS	CLP Vol. Org.Soils - WH014
WCCLPS	Anions in Solids - WH232
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary

TMA Inc. REPORT

Work Order # A2-01-095

Received: 01/24/92 05/13/92 15:27:42 Work Not Complete

SAMPLE IDENTIFICATION

8 Blank Summary-TCLP VOA2

9 Calibration Date

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T5 FRACTION 01A TEST CODE WCCLPS NAME Anions in Solids - WW232

Date & Time Collected 01/15/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300	2.3	mg/Kg	1.0
Chloride	300	8.6	mg/Kg	2.0
Nitrite	300	<1	mg/Kg	1.0
Nitrate	300	5.4	mg/Kg	2.0
Sulfate	300	33	mg/Kg	10.0
Phosphate	300	<4	mg/Kg	4.0

FORM I

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T3 FRACTION 02A TEST CODE TCV1 NAME TCLP Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP VOLATILE ORGANICS

Sample Matrix (soil/water): LEACHATE
Leachate vol analyzed (mL): 1.0
Date Received: 01/23/92
Date Analyzed: 02/05/92
Instrument ID: BULL

Lab File ID: 20205R13
TCLP Extraction Date: 02/02/92
Date Leachate Extracted:
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
71-43-2	Benzene	ND	0.025
56-23-5	Carbon Tetrachloride	ND	0.025
108-90-7	Chlorobenzene	ND	0.025
67-66-3	Chloroform	ND	0.025
107-06-2	1,2-Dichloroethane	ND	0.025
75-35-4	1,1-Dichloroethylene	ND	0.025
78-93-3	Methyl Ethyl Ketone	ND	0.050
127-18-4	Tetrachloroethylene	ND	0.025
79-01-6	Trichloroethylene	ND	0.025
75-01-4	Vinyl Chloride	ND	0.050

% RECOVERY SURROGATE COMPOUND

d8-Toluene 106

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T4 FRACTION 03A TEST CODE TCV1 NAME TCLP Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP VOLATILE ORGANICS

Sample Matrix (soil/water): LEACHATE
Leachate vol analyzed (mL): 1.0
Date Received: 01/23/92
Date Analyzed: 02/05/92
Instrument ID: BULL

Lab File ID: 20205B14
TCLP Extraction Date: 02/02/92
Date Leachate Extracted:
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
71-43-2	Benzene	ND	0.025
56-23-5	Carbon Tetrachloride	ND	0.025
108-90-7	Chlorobenzene	ND	0.025
67-66-3	Chloroform	ND	0.025
107-06-2	1,2-Dichloroethane	ND	0.025
75-35-4	1,1-Dichloroethylene	ND	0.025
78-93-3	Methyl Ethyl Ketone	ND	0.050
127-18-4	Tetrachloroethylene	ND	0.025
79-01-6	Trichloroethylene	ND	0.025
75-01-4	Vinyl Chloride	ND	0.050

% RECOVERY SURROGATE COMPOUND

d8-Toluene 103

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T5 FRACTION 01N TEST CODE TCV1 NAME TCLP Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP VOLATILE ORGANICS

Sample Matrix (soil/water): LEACHATE
Leachate vol analyzed (mL): 1.0
Date Received: 01/23/92
Date Analyzed: 02/05/92
Instrument ID: BULL

Lab File ID: 20205B12
TCLP Extraction Date: 02/02/92
Date Leachate Extracted:
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
71-43-2	Benzene	ND	0.025
56-23-5	Carbon Tetrachloride	ND	0.025
108-90-7	Chlorobenzene	ND	0.025
67-66-3	Chloroform	ND	0.025
107-06-2	1,2-Dichloroethane	ND	0.025
75-35-4	1,1-Dichloroethylene	ND	0.025
78-93-3	Methyl Ethyl Ketone	ND	0.050
127-18-4	Tetrachloroethylene	ND	0.025
79-01-6	Trichloroethylene	ND	0.025
75-01-4	Vinyl Chloride	ND	0.050

% RECOVERY SURROGATE COMPOUND

d8-Toluene 93

TMA Inc. REPORT Work Order # A2-01-095

:ceived: 01/24/92 Results by Sample

.MPLE ID B018T6 FRACTION 04A TEST CODE TCV1 NAME TCLP Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP VOLATILE ORGANICS

Sample Matrix (soil/water): LEACHATE
Leachate vol analyzed (mL): 1.0
Date Received: 01/23/92
Date Analyzed: 02/05/92
Instrument ID: BULL

Lab File ID: 20205B15
TCLP Extraction Date: 02/02/92
Date Leachate Extracted:
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
71-43-2	Benzene	ND	0.025
56-23-5	Carbon Tetrachloride	ND	0.025
108-90-7	Chlorobenzene	ND	0.025
67-66-3	Chloroform	ND	0.025
107-06-2	1,2-Dichloroethane	ND	0.025
75-35-4	1,1-Dichloroethylene	ND	0.025
78-93-3	Methyl Ethyl Ketone	ND	0.050
127-18-4	Tetrachloroethylene	ND	0.025
79-01-6	Trichloroethylene	ND	0.025
75-01-4	Vinyl Chloride	ND	0.050

% RECOVERY SURROGATE COMPOUND

d8-Toluene 94

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T7 FRACTION 05A TEST CODE TCV1 NAME TCLP Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP VOLATILE ORGANICS

Sample Matrix (soil/water): LEACHATE
Leachate vol analyzed (mL): 1.0
Date Received: 01/23/92
Date Analyzed: 02/06/92
Instrument ID: BULL

Lab File ID: 20206B04
TCLP Extraction Date: 02/02/92
Date Leachate Extracted:
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
71-43-2	Benzene	ND	0.025
56-23-5	Carbon Tetrachloride	ND	0.025
108-90-7	Chlorobenzene	ND	0.025
67-66-3	Chloroform	ND	0.025
107-06-2	1,2-Dichloroethane	ND	0.025
75-35-4	1,1-Dichloroethylene	ND	0.025
78-93-3	Methyl Ethyl Ketone	ND	0.050
127-18-4	Tetrachloroethylene	ND	0.025
79-01-6	Trichloroethylene	ND	0.025
75-01-4	Vinyl Chloride	ND	0.050

% RECOVERY SURROGATE COMPOUND

d8-Toluene 91

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T8 FRACTION 06A TEST CODE ICV1 NAME TCLP Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP VOLATILE ORGANICS

Sample Matrix (soil/water): LEACHATE
Leachate vol analyzed (mL): 1.0
Date Received: 01/23/92
Date Analyzed: 02/06/92
Instrument ID: BULL

Lab File ID: 20206B05
TCLP Extraction Date: 02/02/92
Date Leachate Extracted:
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
71-43-2	Benzene	ND	0.025
56-23-5	Cerbon Tetrachloride	ND	0.025
108-90-7	Chlorobenzene	ND	0.025
67-66-3	Chloroform	ND	0.025
107-06-2	1,2-Dichloroethane	ND	0.025
75-35-4	1,1-Dichloroethylene	ND	0.025
78-93-3	Methyl Ethyl Ketone	ND	0.050
127-18-4	Tetrachloroethylene	ND	0.025
79-01-6	Trichloroethylene	ND	0.025
75-01-4	Vinyl Chloride	ND	0.050

% RECOVERY SURROGATE COMPOUND

d8-Toluene 101

TMA Inc. REPORT Work Order # A2-01-095

eceived: 01/24/92 Results by Sample

AMPLE ID B018T3 FRACTION 02A TEST CODE TCS1 NAME TCLP Semi-Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP SEMI-VOLATILE ORGANICS

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 1.0
Injection Volume (uL): 1.0
Instrument ID: 4500N

Lab File ID: 20207N06
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/06/92
Date Analyzed: 02/07/92
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
1319-77-3	Cresol (Total)	ND	0.02
87-86-5	Pentachlorophenol	ND	0.1
95-95-4	2,4,5-Trichlorophenol	ND	0.02
88-06-2	2,4,6-Trichlorophenol	ND	0.02
106-46-7	1,4-Dichlorobenzene	ND	0.02
121-14-2	2,4-Dinitrotoluene	ND	0.02
118-74-1	Hexachlorobenzene	ND	0.02
87-68-3	Hexachlorobutadiene	ND	0.02
67-72-1	Hexachloroethane	ND	0.02
98-95-3	Nitrobenzene	ND	0.02
110-86-1	Pyridine	ND	0.02

% RECOVERY	SURROGATE COMPOUND
80	2-Fluorophenol
84	Nitrobenzene-d5

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T4 FRACTION 03A TEST CODE TCS1 NAME TCLP Semi-Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP SEMI-VOLATILE ORGANICS

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 1.0
Injection Volume (uL): 1.0
Instrument ID: 4500N

Lab File ID: 20207N07
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/06/92
Date Analyzed: 02/07/92
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
1319-77-3	Cresol (Total)	ND	0.02
87-86-5	Pentachlorophenol	ND	0.1
95-95-4	2,4,5-Trichlorophenol	ND	0.02
88-06-2	2,4,6-Trichlorophenol	ND	0.02
106-46-7	1,4-Dichlorobenzene	ND	0.02
121-14-2	2,4-Dinitrotoluene	ND	0.02
118-74-1	Hexachlorobenzene	ND	0.02
87-68-3	Hexachlorobutadiene	ND	0.02
67-72-1	Hexachloroethane	ND	0.02
98-95-3	Nitrobenzene	ND	0.02
110-86-1	Pyridine	ND	0.02

% RECOVERY	SURROGATE COMPOUND
76	2-Fluorophenol
83	Nitrobenzene-d5

TNA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T5 FRACTION 01W TEST CODE TCS1 NAME TCLP Semi-Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP SEMI-VOLATILE ORGANICS

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 1.0
Injection Volume (uL): 1.0
Instrument ID: 4500N

Lab File ID: 20207N05
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/06/92
Date Analyzed: 02/07/92
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
1319-77-3	Cresol (Total)	ND	0.02
87-86-5	Pentachlorophenol	ND	0.1
95-95-4	2,4,5-Trichlorophenol	ND	0.02
88-06-2	2,4,6-Trichlorophenol	ND	0.02
106-46-7	1,4-Dichlorobenzene	ND	0.02
121-14-2	2,4-Dinitrotoluene	ND	0.02
118-74-1	Hexachlorobenzene	ND	0.02
87-68-3	Hexachlorobutadiene	ND	0.02
67-72-1	Hexachloroethane	ND	0.02
98-95-3	Nitrobenzene	ND	0.02
110-86-1	Pyridine	ND	0.02

% RECOVERY	SURROGATE COMPOUND
67	2-Fluorophenol
68	Nitrobenzene-d5

TMA Inc. REPORT Work Order # A2-01-095

:eceived: 01/24/92 Results by Sample

AMPLE ID B018T6 FRACTION 04A TEST CODE TCS1 NAME TCLP Semi-Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP SEMI-VOLATILE ORGANICS

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 1.0
Injection Volume (uL): 1.0
Instrument ID: 4500N

Lab File ID: 20207N08
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/06/92
Date Analyzed: 02/07/92
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
1319-77-3	Cresol (Total)	ND	0.02
87-86-5	Pentachlorophenol	ND	0.1
95-95-4	2,4,5-Trichlorophenol	ND	0.02
88-06-2	2,4,6-Trichlorophenol	ND	0.02
106-46-7	1,4-Dichlorobenzene	ND	0.02
121-14-2	2,4-Dinitrotoluene	ND	0.02
118-74-1	Hexachlorobenzene	ND	0.02
87-68-3	Hexachlorobutadiene	ND	0.02
67-72-1	Hexachloroethane	ND	0.02
98-95-3	Nitrobenzene	ND	0.02
110-86-1	Pyridine	ND	0.02

% RECOVERY	SURROGATE COMPOUND
74	2-Fluorophenol
74	Nitrobenzene-d5

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T7 FRACTION 05A TEST CODE TCS1 NAME TCLP Semi-Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP SEMI-VOLATILE ORGANICS

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 1.0
Injection Volume (uL): 1.0
Instrument ID: 4500N

Lab File ID: 20207N11
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/06/92
Date Analyzed: 02/07/92
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
1319-77-3	Cresol (Total)	ND	0.02
87-86-5	Pentachlorophenol	ND	0.1
95-95-4	2,4,5-Trichlorophenol	ND	0.02
88-06-2	2,4,6-Trichlorophenol	ND	0.02
106-46-7	1,4-Dichlorobenzene	ND	0.02
121-14-2	2,4-Dinitrotoluene	ND	0.02
118-74-1	Hexachlorobenzene	ND	0.02
87-68-3	Hexachlorobutadiene	ND	0.02
67-72-1	Hexachloroethane	ND	0.02
98-95-3	Nitrobenzene	ND	0.02
110-86-1	Pyridine	ND	0.02

% RECOVERY	SURROGATE COMPOUND
77	2-Fluorophenol
92	Nitrobenzene-d5

TMA Inc. REPORT Work Order # A2-01-095

eceived: 01/24/92 Results by Sample

AMPLE ID B018T8 FRACTION 06A TEST CODE TCS1 NAME TCLP Semi-Volatiles Form 1

Date & Time Collected 01/15/92 Category

TCLP SEMI-VOLATILE ORGANICS

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 1.0
Injection Volume (uL): 1.0
Instrument ID: 4500N

Lab File ID: 20207N12
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/06/92
Date Analyzed: 02/07/92
Dilution Factor: 1.00

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
1319-77-3	Cresol (Total)	ND	0.02
87-86-5	Pentachlorophenol	ND	0.1
95-95-4	2,4,5-Trichlorophenol	ND	0.02
88-06-2	2,4,6-Trichlorophenol	ND	0.02
106-46-7	1,4-Dichlorobenzene	ND	0.02
121-14-2	2,4-Dinitrotoluene	ND	0.02
118-74-1	Hexachlorobenzene	ND	0.02
87-68-3	Hexachlorobutadiene	ND	0.02
67-72-1	Hexachloroethane	ND	0.02
98-95-3	Nitrobenzene	ND	0.02
110-86-1	Pyridine	ND	0.02

% RECOVERY	SURROGATE COMPOUND
78	2-Fluorophenol
92	Nitrobenzene-d5

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T3 FRACTION 02A TEST CODE TCP1 NAME TCLP Pesticides Form 1

Date & Time Collected 01/15/92 Category

TCLP CHLORINATED PESTICIDES

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 10
Injection Volume (uL): 1.0
Column ID:

Lab File ID: A22612
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/04/92
Date Analyzed: 02/26/92
Dilution Factor: 1.0

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
57-74-9	Chlordane	ND	0.008
72-20-8	Endrin	ND	0.0008
76-44-8	Heptachlor	ND	0.0004
1024-57-3	Heptachlor Epoxide	ND	0.0004
58-89-9	Lindane	ND	0.0004
72-43-5	Methoxychlor	ND	0.004
8001-35-2	Toxaphene	ND	0.008

% RECOVERY SURROGATE COMPOUND

DBC 90

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T4 FRACTION 03A TEST CODE TCP1 NAME TCLP Pesticides Form 1

Date & Time Collected 01/15/92 Category

TCLP CHLORINATED PESTICIDES

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 10
Injection Volume (uL): 1.0
Column ID:

Lab File ID: A22613
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/04/92
Date Analyzed: 02/26/92
Dilution Factor: 1.0

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
57-74-9	Chlordane	ND	0.008
72-20-8	Endrin	ND	0.0008
76-44-8	Heptachlor	ND	0.0004
1024-57-3	Heptachlor Epoxide	ND	0.0004
58-89-9	Lindane	ND	0.0004
72-43-5	Methoxychlor	ND	0.004
8001-35-2	Toxaphene	ND	0.008

% RECOVERY SURROGATE COMPOUND

DBC 99

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T5 FRACTION 01B TEST CODE TCP1 NAME TCLP Pesticides Form 1

Date & Time Collected 01/15/92 Category

TCLP CHLORINATED PESTICIDES

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 10
Injection Volume (uL): 1.0
Column ID:

Lab File ID: A22611
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/04/92
Date Analyzed: 02/26/92
Dilution Factor: 1.0

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
57-74-9	Chlordane	ND	0.008
72-20-8	Endrin	ND	0.0008
76-44-8	Heptachlor	ND	0.0004
1024-57-3	Heptachlor Epoxide	ND	0.0004
58-89-9	Lindane	ND	0.0004
72-43-5	Methoxychlor	ND	0.004
8001-35-2	Toxaphene	ND	0.008

% RECOVERY SURROGATE COMPOUND

DBC 77

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T6 FRACTION 04A TEST CODE TCP1 NAME TCLP Pesticides Form 1
Date & Time Collected 01/15/92 Category

TCLP CHLORINATED PESTICIDES

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 10
Injection Volume (uL): 1.0
Column ID:

Lab File ID: A22614
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/04/92
Date Analyzed: 02/26/92
Dilution Factor: 1.0

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
57-74-9	Chlordane	ND	0.008
72-20-8	Endrin	ND	0.0008
76-44-8	Heptachlor	ND	0.0004
1024-57-3	Heptachlor Epoxide	ND	0.0004
58-89-9	Lindane	ND	0.0004
72-43-5	Methoxychlor	ND	0.004
8001-35-2	Toxaphene	ND	0.008

% RECOVERY SURROGATE COMPOUND

DBC 92

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T7 FRACTION 05A TEST CODE TCP1 NAME TCLP Pesticides Form 1

Date & Time Collected 01/15/92 Category

TCLP CHLORINATED PESTICIDES

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 10
Injection Volume (uL): 1.0
Column ID:

Lab File ID: A22617
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/04/92
Date Analyzed: 02/26/92
Dilution Factor: 1.0

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
57-74-9	Chlordane	ND	0.008
72-20-8	Endrin	ND	0.0008
76-44-8	Heptachlor	ND	0.0004
1024-57-3	Heptachlor Epoxide	ND	0.0004
58-89-9	Lindane	ND	0.0004
72-43-5	Methoxychlor	ND	0.004
8001-35-2	Toxaphene	ND	0.008

% RECOVERY SURROGATE COMPOUND

DBC 92

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T8 FRACTION 06A TEST CODE TCP1 NAME TCLP Pesticides Form 1

Date & Time Collected 01/15/92 Category

TCLP CHLORINATED PESTICIDES

Sample Matrix: LEACHATE
Leachate vol (mL): 250
Date Received: 01/23/92
Conc. Extract Vol.(mL): 10
Injection Volume (uL): 1.0
Column ID:

Lab File ID: A22618
TCLP Extraction Date: 02/02/92
Date Leachate Extracted: 02/04/92
Date Analyzed: 02/26/92
Dilution Factor: 1.0

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
57-74-9	Chlordane	ND	0.008
72-20-8	Endrin	ND	0.0008
76-44-8	Heptachlor	ND	0.0004
1024-57-3	Heptachlor Epoxide	ND	0.0004
58-89-9	Lindane	ND	0.0004
72-43-5	Methoxychlor	ND	0.004
8001-35-2	Toxaphene	ND	0.008

% RECOVERY SURROGATE COMPOUND

DBC 103

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92

Results by Sample

SAMPLE ID B018T3 FRACTION 02A TEST CODE ICH1 NAME TCLP Herbicides Form 1

Date & Time Collected 01/15/92 Category

TCLP CHLORINATED HERBICIDES

Sample Matrix (soil/water): LEACHATE

Lab File ID: HA21810

Leachate vol (mL): 200

TCLP Extraction Date: 02/02/92

Date Received: 01/23/92

Dete Leachate Extracted: 02/12/92

Conc.Extract Vol.(mL): 2.0

Date Analyzed: 02/18/92

Injection Volume (uL): 1.0

Dilution Factor: 1.00

Column ID: PTE-5

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
94-75-7	2,4-D	ND	0.094
93-72-1	2,4,5-TP	ND	0.010

% RECOVERY SURROGATE COMPOUND

DCAA 15

TMA Inc. REPORT Work Order # A2-01-095

eceived: 01/24/92 Results by Sample

AMPLE ID B018T4 FRACTION 03A TEST CODE TCH1 NAME TCLP Herbicides Form 1

Date & Time Collected 01/15/92 Category

TCLP CHLORINATED HERBICIDES

Sample Matrix (soil/water): LEACHATE Lab File ID: HA21811

Leachate vol (mL): 200 TCLP Extraction Date: 02/02/92

Date Received: 01/23/92 Date Leachate Extracted: 02/12/92

Conc.Extract Vol.(mL): 2.0 Date Analyzed: 02/18/92

Injection Volume (uL): 1.0 Dilution Factor: 1.00

Column ID: PTE-5

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
94-75-7	2,4-D	ND	0.094
93-72-1	2,4,5-TP	ND	0.010

% RECOVERY SURROGATE COMPOUND

DCAA 21

TMA Inc. REPORT Work Order # A2-01-095

eceived: 01/24/92 Results by Sample

AMPLE ID B018T5 FRACTION 01B TEST CODE TCB1 NAME TCLP Herbicides Form 1
Date & Time Collected 01/15/92 Category

TCLP CHLORINATED HERBICIDES

Sample Matrix (soil/water): LEACHATE Lab File ID: HA2189

Leachate vol (mL): 200 TCLP Extraction Date: 02/02/92

Date Received: 01/23/92 Date Leachate Extracted: 02/12/92

Conc.Extract Vol.(mL): 2.0 Date Analyzed: 02/18/92

Injection Volume (uL): 1.0 Dilution Factor: 1.00

Column ID: PTE-5

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
94-75-7	2,4-D	ND	0.094
93-72-1	2,4,5-TP	ND	0.010

% RECOVERY SURROGATE COMPOUND

DCAA 18

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92

Results by Sample

SAMPLE ID B018T6 FRACTION 04A TEST CODE TCH1 NAME TCLP Herbicides Form 1

Date & Time Collected 01/15/92 Category

TCLP CHLORINATED HERBICIDES

Sample Matrix (soil/water): LEACHATE

Lab File ID: HA21812

Leachate vol (mL): 200

TCLP Extraction Date: 02/02/92

Date Received: 01/23/92

Date Leachate Extracted: 02/12/92

Conc.Extract Vol.(mL): 2.0

Date Analyzed: 02/18/92

Injection Volume (uL): 1.0

Dilution Factor: 1.00

Column ID: PTE-5

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
94-75-7	2,4-D	ND	0.094
93-72-1	2,4,5-TP	ND	0.010

% RECOVERY SURROGATE COMPOUND

DCAA 24

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T7 FRACTION 05A TEST CODE TCH1 NAME TCLP Herbicides Form 1

Date & Time Collected 01/15/92 Category

TCLP CHLORINATED HERBICIDES

Sample Matrix (soil/water): LEACHATE Lab File ID: HA21815

Leachate vol (mL): 200 TCLP Extraction Date: 02/02/92

Date Received: 01/23/92 Date Leachate Extracted: 02/12/92

Conc.Extract Vol.(mL): 2.0 Date Analyzed: 02/18/92

Injection Volume (uL): 1.0 Dilution Factor: 1.00

Column ID: PTE-5

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
94-75-7	2,4-D	ND	0.094
93-72-1	2,4,5-TP	ND	0.010

% RECOVERY SURROGATE COMPOUND

DCAA 20

TMA Inc. REPORT Work Order # A2-01-095

eceived: 01/24/92 Results by Sample

AMPLE ID B018T8 FRACTION 06A TEST CODE TCH1 NAME TCLP Herbicides Form 1

Date & Time Collected 01/15/92 Category

TCLP CHLORINATED HERBICIDES

Sample Matrix (soil/water): LEACHATE Lab File ID: HA21816

Leachate vol (mL): 200 TCLP Extraction Date: 02/02/92

Date Received: 01/23/92 Date Leachate Extracted: 02/12/92

Conc.Extract Vol.(mL): 2.0 Date Analyzed: 02/18/92

Injection Volume (uL): 1.0 Dilution Factor: 1.00

Column ID: PTE-5

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
94-75-7	2,4-D	ND	0.094
93-72-1	2,4,5-TP	ND	0.010

% RECOVERY SURROGATE COMPOUND

DCAA 20

TMA Inc. REPORT Work Order # A2-01-095

eceived: 01/24/92 Results by Sample

AMPLE ID B018T3 FRACTION 02A TEST CODE TCM1 NAME TCLP Metals Form 1

Date & Time Collected 01/15/92 Category

TCLP METALS

Sample Matrix: LEACHATE TCLP Extraction Date: 02/02/92

Date Received: 01/23/92

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)	METHOD
7440-38-2	Arsenic	0.007	0.001	F
7440-39-3	Barium	0.25	0.001	P
7440-43-9	Cadmium	ND	0.003	P
7440-47-3	Chromium	ND	0.007	P
7439-92-1	Lead	0.002	0.001	F
7439-97-6	Mercury	ND	0.0002	CV
7782-49-2	Selenium	ND	0.002	F
7440-22-4	Silver	ND	0.003	P

Analytical Methods Used:

P = ICP A = Flame AA F = Furnace AA

CV = Cold Vapor AA

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T4 FRACTION 03A TEST CODE TCM1 NAME TCLP Metals Form 1

Date & Time Collected 01/15/92 Category

TCLP METALS

Sample Matrix: LEACHATE TCLP Extraction Date: 02/02/92

Date Received: 01/23/92

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)	METHOD
7440-38-2	Arsenic	0.004	0.001	F
7440-39-3	Barium	0.25	0.001	P
7440-43-9	Cadmium	ND	0.003	P
7440-47-3	Chromium	ND	0.007	P
7439-92-1	Lead	0.003	0.001	F
7439-97-6	Mercury	ND	0.0002	CV
7782-49-2	Selenium	ND	0.002	F
7440-22-4	Silver	ND	0.003	P

Analyticel Methods Used:

P = ICP A = Flame AA F = Furnace AA

CV = Cold Vapor AA

TMA Inc. REPORT Work Order # A2-01-095

eceived: 01/24/92 Results by Sample

AMPLE ID B018T5 FRACTION 01B TEST CODE TCM1 NAME TCLP Metals Form 1

Date & Time Collected 01/15/92 Category

TCLP METALS

Sample Matrix: LEACHATE TCLP Extraction Date: 02/02/92

Date Received: 01/23/92

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)	METHOD
7440-38-2	Arsenic	0.005	0.001	F
7440-39-3	Barium	0.27	0.001	P
7440-43-9	Cadmium	ND	0.003	P
7440-47-3	Chromium	ND	0.007	P
7439-92-1	Lead	0.006	0.001	F
7439-97-6	Mercury	ND	0.0002	CV
7782-49-2	Selenium	ND	0.002	F
7440-22-4	Silver	ND	0.003	P

Analytical Methods Used:

P = ICP A = Flame AA F = Furnace AA

CV = Cold Vapor AA

TMA Inc. REPORT Work Order # A2-01-095

eceived: 01/24/92 Results by Sample

AMPLE ID B018T6 FRACTION 04A TEST CODE TCM1 NAME TCLP Metals Form 1

Date & Time Collected 01/15/92 Category

TCLP METALS

Sample Matrix: LEACHATE TCLP Extraction Date: 02/02/92

Date Received: 01/23/92

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)	METHOD
7440-38-2	Arsenic	ND	0.001	F
7440-39-3	Barium	0.36	0.001	P
7440-43-9	Cadmium	ND	0.003	P
7440-47-3	Chromium	ND	0.007	P
7439-92-1	Lead	0.002	0.001	F
7439-97-6	Mercury	ND	0.0002	CV
7782-49-2	Selenium	ND	0.002	F
7440-22-4	Silver	ND	0.003	P

Analytical Methods Used:

P = ICP A = Flame AA F = Furnace AA

CV = Cold Vapor AA

TMA Inc. REPORT Work Order # A2-01-095

Received: 01/24/92 Results by Sample

SAMPLE ID B018T7 FRACTION 05A TEST CODE TCM1 NAME TCLP Metals Form 1

Date & Time Collected 01/15/92 Category

TCLP METALS

Sample Matrix: LEACHATE TCLP Extraction Date: 02/02/92

Date Received: 01/23/92

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)	METHOD
7440-38-2	Arsenic	ND	0.001	F
7440-39-3	Barium	0.07	0.001	P
7440-43-9	Cadmium	ND	0.003	P
7440-47-3	Chromium	ND	0.007	P
7439-92-1	Lead	0.001	0.001	F
7439-97-6	Mercury	ND	0.0002	CV
7782-49-2	Selenium	ND	0.002	F
7440-22-4	Silver	ND	0.003	P

Analytical Methods Used:

P = ICP A = Flame AA F = Furnace AA

CV = Cold Vapor AA

TMA Inc. REPORT Work Order # A2-01-095

eceived: 01/24/92

Results by Sample

AMPLE ID B018T8 FRACTION 06A TEST CODE TCM1 NAME TCLP Metals Form 1

Date & Time Collected 01/15/92 Category

TCLP METALS

Sample Matrix: LEACHATE TCLP Extraction Date: 02/02/92

Date Received: 01/23/92

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)	METHOD
7440-38-2	Arsenic	ND	0.001	F
7440-39-3	Barium	0.07	0.001	P
7440-43-9	Cadmium	ND	0.003	P
7440-47-3	Chromium	ND	0.007	P
7439-92-1	Lead	0.002	0.001	F
7439-97-6	Mercury	ND	0.0002	CV
7782-49-2	Selenium	ND	0.002	F
7440-22-4	Silver	ND	0.003	P

Analytical Methods Used:

P = ICP A = Flame AA F = Furnace AA

CV = Cold Vapor AA

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B018T5

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-01-180SAS No.: SDG No.: B018T5

Matrix (soil/water): SOIL Lab Sample ID: 01215-01S

Level (low/med): LOW Date Received: 01/24/92

% Solids: 92.2

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4970.00			P
7440-36-0	Antimony	1.70	U	N	P
7440-38-2	Arsenic	2.00	B		F
7440-39-3	Barium	57.20			P
7440-41-7	Beryllium	0.70	B		P
7440-43-9	Cadmium	0.21	U		P
7440-70-2	Calcium	7740.00			P
7440-47-3	Chromium	5.30			P
7440-48-4	Cobalt	8.80	B		P
7440-50-8	Copper	18.40			P
7439-89-6	Iron	18600.00			P
7439-92-1	Lead	4.20		*	F
7439-95-4	Magnesium	4230.00			P
7439-96-5	Manganese	254.00			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	8.30			P
7440-09-7	Potassium	929.00	B		P
7782-49-2	Selenium	4.20	U	WN	F
7440-22-4	Silver	0.41	U		P
7440-23-5	Sodium	1390.00			P
7440-28-0	Thallium	0.42	U		F
7440-62-2	Vanadium	37.30			P
7440-66-6	Zinc	37.00			P
	Cyanide	5.40	U		AS

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts:

Comments:

9713506.0846

TMA/Skinner & Serman Labs **SAMPLE LOG-IN**

WORKORDER S2-01-215 CLIENT HANFORD-NOR No. SAMPLES:

PROTCL CLP TURNARND 33 days 1 (Soil) (Water) (Specify Other)

COOLER TEMP: 4 oC, or NA

CUSTODIAN A. Benney SDG/BATCH N/A

CUSTODY SEAL: PRESENT/ABSENT INTACT/NOT CLIENT CASE N2-01-180

SHIPER & # Fedex # 141454879 6 PO/CONTRACT# N2-01-180

TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT Dolores Sanchez

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: NONE

SAMPLE CONTAINERS INTACT/BROKEN COMMENTS

CLIENT COMMENT? YES/NO Samples contain radioactive Material

SAMPLE LABELS AGREE WITH CHAIN OF CUSTODY INFO? YES/NO (COMMENT)

CLIENT PAPERWORK AGREES WITH SAMPLES & COC? YES/NO (COMMENT)

SHIPMENT DATES 01/24/92

LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

N/A

	CLIENT ID	MATRIX	RECEIVED	QC	TEST(S)	HOLD TIME UP
1	B018T5	soil	01/24/92	D,S	TM/CN	CN DUP 01/29/92
2						
3						
4						HG due 02/10/92
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18					01/28/92	
19						
20						
21						
22						
23					Complete	AB
24						
25						
26						
27						

SUBCONTRACT: YES/NO, TO: DATE:

REVIEWED Rev. 1.4 PAGE

120

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 1414548796

1275M 1414548796

RECIPIENT'S COPY

1 Date 1-24-92

From (Your Name) Please Print: Sample Control
Your Phone Number (Very Important): 610-235-2633
Company: T M A /NORCAL
Department/Floor No.:
Street Address: 2030 WRIGHT AVE
City: RICHMOND State: CA ZIP Required: 94804

2 To (Recipient's Name) Please Print: Sample Control
Recipient's Phone Number (Very Important): 617 890-7200
Company: TMA/Skinner & Sherman
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 300 Second Avenue
City: Waltham State: MA ZIP Required: 02254

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2320-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card
5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning!†)
- [X] 1 YOUR PACKAGING
- [ ] 16 FEDEX LETTER *
- [ ] 12 FEDEX PAK *
- [ ] 13 FEDEX BOX
- [ ] 14 FEDEX TUBE

Standard Overnight (Delivery by next business afternoon!†)
- [ ] 51 YOUR PACKAGING
- [ ] 56 FEDEX LETTER *
- [ ] 52 FEDEX PAK *
- [ ] 53 FEDEX BOX
- [ ] 54 FEDEX TUBE

Economy Two-Day (Delivery by second business day!†)
- [ ] 30 ECONOMY

Government Overnight (Restricted to authorized users only!)
- [ ] 46 GOVT LETTER
- [ ] 41 GOVT PACKAGE

Freight Service (for Extra Large or any package over 150 lbs.)
- [ ] 70 OVERNIGHT FREIGHT ** (Confirmed reservation required)
- [ ] 80 TWO-DAY FREIGHT **

†Delivery commitment may be later in some areas. *Declared Value Limit $100. **Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- [ ] 1 HOLD FOR PICK-UP (Fill in Box H)
- [ ] 2 DELIVER WEEKDAY
- [ ] 3 DELIVER SATURDAY (Extra charge) (Not available to all locations)
- [ ] 4 DANGEROUS GOODS (Extra charge)
- [ ] 5
- [ ] 6 DRY ICE ..... Lbs.
- [ ] 7 OTHER SPECIAL SERVICE .....
- [ ] 8
- [ ] 9 SATURDAY PICK-UP (Extra charge)
- [ ] 10
- [ ] 11 DESCRIPTION
- [ ] 12 HOLIDAY DELIVERY (If offered) (Extra charge)

6 PACKAGES | WEIGHT in Pounds Only | YOUR DECLARED VALUE
1 | 4
Total | Total | Total

DIM SHIPMENT (Chargeable Weight) [ ] lbs.
L x W x H =

Received At
[X] 1 Regular Stop [ ] 3 Drop Box
[ ] 2 On-Call Stop [ ] 4 BSC [ ] 5 Station

7 Emp. No. | Date
[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del [ ] Chg. To Hold
Street Address
City | State | Zip
Received By: X
Date/Time Received: 01/25/92 10:30 A.B
FedEx Employee Number
Release Signature: 01/24/92
FedEx Emp. No. | Date/Time

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 6/91
PART #137204 FXEM 9/91
FORMAT #099
099

971506.0847

Westinghouse Hanford Company

9713506.0848

CHAIN OF CUSTODY

S&S

Custody Form Initiator: C. E. HEIDEN (509)

Company Contact: MIKE STANKOVICH Telephone: 376-2493

Project Designation/Sampling Locations: 91-93 100-DR-1 Collection Date: 1-15-92

SODIUM DICHROMATE TANK SOIL SAMPLING

Ice Chest No.: RM #43 Field Logbook No.: WHC-N-429-1

Bill of Lading/Airbill No.: 250986525 9 Offsite Property No.: ~~W92-0-025-29~~

Method of Shipment: EMERY

Shipped to: TMA/NORCAL RICHMOND, CA.

Possible Sample Hazards/Remarks: N/A

Sample Identification

B018T5	SOIL	~~2 - 1000 ML~~ 2 ~~1~~ - 250 ML CH 1/15/92 ~~1 - 120 ML~~ ~~1 - 60 ML~~
~~B018T3~~		~~1 - 250 ML~~
~~B018T4~~		~~1 - 250 ML~~
B018T6	SOIL	1 - 250 ML
B018T7		1 - 250 ML
B018T8		1 - 250 ML

Field Transfer of Custody	CHAIN OF POSSESSION	(Sign and Print Names)
Relinquished by: C.E. Heiden C.E. Heiden	Received by: Kermit Blum	Date/Time: 1-21-92 1130
Relinquished by: 1-23-92 Kermit Blum	Received by: A [illegible] B	Date/Time: 01/24/92 9:30
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: 118

A-6000-407 (12/90)

9213506.0849 THA/NORCAL

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector F.W. Gustafson Date Sampled 01/15/92 Time ____ hours

Company Contact Mike Stankovich Telephone (509) 376-2493

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested	Method	
B018T5	~~1-1000ml~~ ~~1-180ml~~ ~~1-60ml~~ 1-250ml 3 2	Soil	ICP/AA Metals	6010	250 ml
			AND Hg	7470	
~~B018T3~~	1-250ml	Soil	Cyanide	9010	250 ml
~~B018T4~~			~~VOA~~	~~8240~~	~~180 ml~~
~~B018T6~~			~~Semi-VOA~~	8270	
~~B018T7~~			~~PCBs~~/Pesticides	8080	~~1000 ml~~
B018T8	1-250ml	Soil	~~Anions~~ (IC)	EPA 300.0	
			~~Carbon 14~~	LAB SOP	~~60 ml~~
			~~Strontium-90~~	LAB SOP	1000 ml
			~~U-235~~		
			U-238/239		
			~~Pu-239/240~~		
			~~Gross~~ Alpha		
			Gross Beta		
			Gamma Spec		
			Am-241	LAB SOP	
			~~TCLP~~	1311	~~250 ml~~
			NOTE: Sample #'s B018T3, B018T4 B018T6, B018T7, B018T8 to be analyzed for TCLP (Method 1311) only. (1-250 ml jars)		

Field Information** —

Special Handling and/or Storage —

Possible Sample Hazards —

PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 1-21-92

Analysis Required ____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406 (05/90)

CASE NARRATIVE

GENERAL

1. Soil sample number B018J0 (TMA/Norcal Group No. 7010-2) for ^{99}Tc analysis was processed with the soils from location 100-HR-1 (TMA/Norcal Group Nos. 7026 and 7028).

QUALITY CONTROL

2. The internal quality control consisted of one sample each of a laboratory control sample, a blank, and a replicate. The replicate was 7010-8 and the blank and LCS were sample numbers 7026A-11 and 7026A-12 respectively.

3. LABORATORY CONTROL SAMPLE - The MDA's for ^{99}Tc were 1.2 and 0.90 pCi/g which were above RDL of 0.50 pCi/g.

4. BLANKS - The MDA's for ^{99}Tc were 0.9 and 1.3 pCi/g.

5. REPLICATES - The replicate was satisfactory.

6. ^{99}Tc Analyses: The average yield for twenty-six analyses was 46 ± 38%. The lowest yield was 14% and the highest was 78%. The average MDA was 1.0 ± 2.3 pCi/g. Positive concentration of ^{99}Tc was not found in the samples.

ATTACHMENT 1 DATA TABLE

Collection date: 1/15/92

Customer I.D.	TMA/Norcal Group No. 7010	Analysis	Results pCi/g ± 2 σ	
B018T5 (soil)	1	Gross Alpha	(4.62 ± 4.62)	E+00
		Gross Beta	(7.48 ± 2.90)	E+00
		^{14}C	(40.36 ± 6.83)	E+00
		^{90}Sr	(1.9 ± 3.1)	E-01
		^{234}U	(4.0 ± 0.7)	E-01
		^{235}U	(3 ± 2)	E-02
		^{238}U	(4.2 ± 0.7)	E-01
		^{238}Pu	(2 ± 3)	E-02
		^{239}Pu	(-1 ± 2)	E-02
		^{241}Am	(4.76 ± 0.979)	E-01
		Gamma Scan:		
		^{40}K	(1.105 ± 0.203)	E+01
		^{51}Cr	<3.597	E+01
		^{60}Co	<1.534	E-01
		^{65}Zn	<4.849	E-01
		^{134}Cs	<1.576	E-01
		^{137}Cs	<1.327	E-01
		^{226}Ra	(6.184 ± 2.977)	E-01
		^{228}Th	(8.998 ± 2.418)	E-01
		^{232}Th	<7.058	E-01
B018J0 (soil)	2	Gross Alpha	(4.95 ± 10.4)	E+00
		Gross Beta	(13.3 ± 4.85)	E+00
		^{14}C	(25.06 ± 6.16)	E+00
		^{90}Sr	(-0.18 ± 1.89)	E+00
		^{99}Tc	(5.6 ± 4.9)	E-01
		^{234}U	(5.1 ± 0.7)	E-01
		^{235}U	(1 ± 2)	E-02
		^{238}U	(4.6 ± 0.6)	E-01
		^{238}Pu	(-1 ± 2)	E-02
		^{239}Pu	(-1 ± 2)	E-02
		^{241}Am	(2.79 ± 4.79)	E-02
		Gamma Scan:		
		^{40}K	(1.059 ± 0.215)	E+01
		^{51}Cr	<4.319	E+01
		^{60}Co	<1.522	E-01
		^{65}Zn	<5.253	E-01
		^{134}Cs	<1.632	E-01
		^{137}Cs	<1.239	E-01
		^{226}Ra	(4.901 ± 1.988)	E-01
		^{228}Th	(1.020 ± 0.229)	E+00
		^{232}Th	(7.117 ± 4.410)	E-01

QC SAMPLES PROCESSED:

Sample I.D.		Type	Analyses	Reported with Data Package
7010-3	(QC 7977)	Spike	Gross α,β	X
7010-4	(QC 7982)	LCS	Gross α,β	X
7010-5	(QC 7987)	Replicate	Gross α,β	X
7010-3	(QC 7981)	Spike	^{14}C	X
7010-4	(QC 7986)	LCS	^{14}C	X
7010-5	(QC 7991)	Replicate	^{14}C	X
7010-3	(QC 8067)	Spike	^{90}Sr	X
7010-4	(QC 8068)	LCS	^{90}Sr	X
7010-5	(QC 7989)	Replicate	^{90}Sr	X
7010-3	(QC 7980)	Spike	Isotopic U	X
7010-4	(QC 7985)	LCS	Isotopic U	X
7011-5	(QC 7990)	Replicate	Isotopic U	X
7010-3	(QC 7979)	Spike	Isotopic Pu	X
7010-4	(QC 7984)	LCS	Isotopic Pu	X
7010-5	(QC 7989)	Replicate	Isotopic Pu	X
7010-6	(QC 8144)	Spike	^{241}Am	X
7010-7	(QC 8145)	LCS	^{241}Am	X
7010-5	(QC 7989)	Replicate	^{241}Am	X
7010-3	(QC 7978)	Spike	Gamma Scan	X
7010-4	(QC 7983)	LCS	Gamma Scan	X
7010-5	(QC 7988)	Replicate	Gamma Scan	X

6. Analysis, reanalysis, and reworks, etc.

Gross Alpha and Gross Beta Analyses: The results of the spike, the laboratory control sample were satisfactory. No abnormalities were encountered.

^{14}C Analyses: The found/added ratio of ^{14}C spike was 0.84 ± 0.03. The replicate results did not agree well. Most of the QC blanks failed because of the reasons given below:

Most of the QC blanks failed because of the following reasons:

Table 1 lists the order of ^{14}C analyses processed and net counts per minute for the samples. All the sets in Table 1 were classified as low level analyses so it was assumed that the probability of cross contamination would be low. Therefore, no memory blank was run between samples to cleanse the system of potential contaminants. This assumption was true for all analyses except the laboratory control sample (LCS). The LCS had over 1000 cpm and some of this carried over to the next analysis. The average cross contamination was 0.4%. This is low enough that there was no carry over to the second analysis except for blanks. Table 1 lists the order in which samples were combusted.

All the sample results are valid. The process that led to contaminated blanks were limited to only the blanks.

The corrective action taken has been to institute the memory blank for all analyses regardless of presumed activity. This will be in the method due to be finalized in the next few weeks.

Strontium Analyses: The average yield for 2 analyses was 72.5%. The lowest yield was 72% and the highest was 73%. The results of the spike, the laboratory control sample, and the replicate were satisfactory. No abnormalities were encountered.

Isotopic Uranium Analyses: The average yield for 2 analyses was 55%. The lowest yield was 52% and the highest was 58%. The results of the spike, the laboratory control sample, and the replicate were satisfactory. No abnormalities were encountered.

^{241}Am Analyses: The average yield for 2 analyses was 62%. The lowest yield was 49% and the highest was 75%. The results of the spike, the laboratory control sample, and the replicate were satisfactory. No abnormalities were encountered.

Isotopic Pu Analyses: The average yield for 2 analyses was 45%. The lowest yield was 40% and the highest was 50%. The results of the spike, the laboratory control sample, and the replicate were satisfactory. No abnormalities were encountered.

Gamma Scan Analyses: QC sample 7010-3 (QC 7978), spike for gamma scan, and QC sample 7010-4 (QC 7983), blank for gamma scan were mislabelled in the laboratory; 7010-3 was counted as a spike. With the mislabelling considered the found/added ratios for 7010-3 (QC 7978)spike for gamma scan are:

^{60}Co Found = (1.493 ± 0.330) E+02, Added: (1.436 ± 0.0574) E+02; F/A = 1.04
^{137}Cs Found = (1.551 ± 0.293) E+02, Added: (1.252 ± 0.0501) E+02; F/A = 1.24

and the blank results were satisfactory. No other abnormalities were encountered.

CASE NARRATIVE

1. Project 100-DR-1 Vadose Zone soil samples (TMA/Norcal Group Nos. 7010) were processed and the results of the analyses are reported. The sample ID's are:

Customer Sample ID	TMA/Norcal Group No.	Customer Sample ID	TMA/Norcal Group No.
B018T5	7010-1	B018J0	7010-2

2. The analysis reported are:

SOIL	
Analyte Sample #	Group # & Sample #
Gross α & β	7010-1-2
^{14}C	7010-1-2
^{90}Sr	7010-1-2
Isotopic U	7010-1-2
Isotopic Pu	7010-1-2
^{241}Am	7010-1-2
Gamma Scan	7010-1-2

3. Results are reported pCi/g with 2 σ errors.

4. The QC samples consisting of a spike, a laboratory control sample, and a replicate were processed with each batch as shown on Table 1.

TABLE 1

Preparation Batch Samples Processed	Data Package
7010-1-2	- SOIL

TABLE 1

Order of Analysis	TMA/Norcal Sample I.D.	Description	Net cpm
1	7010-1		5.52
2	7010-2		3.64
3	7010-3	LCS	1272.
4	7010-4	Blank	4.79
5	7010-5	Duplicate	2.20
6	7009-1		1.93
7	7009-2	LCS	1261.
8	7009-3	Blank	4.46
9	7009-4	Duplicate	3.79
10	7007-1		1.15
11	7007-2		1599
12	7007-3		0.99
13	7007-4		0.38
14	7007-5		0.90
15	7007-6		1.69
16	7007-7	Duplicate	1.26
16	7007-8	LCS	1314.
17	7007-9	Blank	4.08
18	7012-1		0.65
19	9582-1		1.19
20	9582-2		0.49
21	9582-3		0.95
22	9582-4		1.22
23	9582-5		1.44
24	9582-6		6.20
25	9582-7	Duplicate	1.30
26	9582-8	LCS	1352.
27	9582-9	Blank	6.87
28	7027-1		0.57
29	7027-2		0.89
30	7027-3		0.45
31	7027-4		0.55
32	7027-5		0.30
33	7027-6		0.54
34	7030-1		-0.16
35	7030-2		0.07
36	7034-1		( )
37	7034-2		0.50
38	7034-3		0.15
39	7034-4		0.37
40	7034-5		0.38
41	7034-6		0.50
42	7034-7		0.59
43	7034-8		0.29
44	7034-9	LCS	1349.
45	7034-10	Blank	43.52
46	7034-11	Duplicate	( )
47	7042-1		1.00
48	7042-2		0.02
49	7042-3		3.64
50	7042-4		2.24

TABLE 1 (cont'd.

Order of Analysis	TMA/Norcal Sample I.D.	Description	Net cpm
51	7042-5		6.98
52	7042-6		92.15
53	7042-7		19.06
54	7042-8	LCS	1421.
55	7042-9	Blank	5.12
56	7042-10	Duplicate	1.33
57	7039-1		0.04
58	7039-2		0.13
59	7039-3		0.74
60	7039-4		0.58
61	7039-5		1360.
62	7039-6		1.5

Westinghouse Hanford Company 9713506.0857

CHAIN OF CUSTODY

000018

Custody Form Initiator C. E. HEIDEN (509)

Company Contact MIKE STANKOVICH Telephone 376-2493

Project Designation/Sampling Locations 91-93 100-DR-1 Collection Date 1-15-92

SODIUM DICHROMATE TANK SOIL SAMPLING

Ice Chest No. RM #43 Field Logbook No. WHC-N-429-1

Bill of Lading/Airbill No. 250986525 9 Offsite Property No. W92-0-0123-29

Method of Shipment EMERY

Shipped to TMA/NORCAL RICHMOND, CA.

Possible Sample Hazards/Remarks N/A

Sample Identification

B018T5	SOIL	2 - 1000 ML	
		3 ~~4~~ - 250 ML	
		CH 11/5/92	
		1 - 120 ML	
		1 - 60 ML	
B018T3	SOIL	1 - 250 ML	
B018T4		1 - 250 ML	
B018T6		1 - 250 ML	
B018T7		1 - 250 ML	
B018T8		1 - 250 ML	

CHAIN OF POSSESSION

] Field Transfer of Custody (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
C.E. Heiden C.E. Heiden	Kermit Blum	1-21-92 1130
elinquished by:	Received by:	Date/Time:
elinquished by:	Received by:	Date/Time:
elinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90)

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector F.W. Gustafson Date Sampled 01/15/92 Time ____ hours

Company Contact Mike Stankovich Telephone (509) 376-2493

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested	Method	
B018T5	2-1000ml 1-120ml 4-250ml 1-60ml 3	Soil	ICP/AA Metals	6010	250 ml
			AND Hg	7470	
B018T3	1-250ml	Soil	Cyanide	9010	250 ml
B018T4	↑	↑	VOA	8240	120 ml
B018T6			Semi-VOA	8270	1000 ml
B018T7	↓	↓	PCB's/Pesticides	8080	
B018T8	1-250ml	Soil	Anions (IC)	EPA 300.0	
			Carbon 14	LAB SOP	60 ml
			Strontium-90	LAB SOP	1000 ml
			U-235	↑	
			U-238/239		
			Pu-239/240		
			Gross Alpha		
			Gross Beta		
			Gamma Spec	↓	
			Am-241	LAB SOP	
			TCLP	1311	250 ml
			NOTE: Sample #'s B018T3, B018T4 B018T6, B018T7, B018T8 to be analyzed for TCLP (Method 1311) only. (1-250 ml jars)		

Field Information** —

Special Handling and/or Storage —

Possible Sample Hazards —

PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 1-21-92

Analysis Required ____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

9713506.0859

Westinghouse Hanford Company

CHAIN OF CUSTODY

000020

Custody Form Initiator CM Chance

Company Contact J.D. Fancher Telephone (509) 376-2081

Project Designation/Sampling Locations 100 DR-1 Vadose Zone Sampling Collection Date 1-15-92

BH 116-DR-9A

Ice Chest No. SNL-99 Field Logbook No. WHC-N-560

Bill of Lading/Airbill No. Offsite Property No. W92-0-0011 #

Method of Shipment Overnight Air Delivery

Shipped to TMA/NORCAL 2030 Wright Ave. Richmond Ca. 94804

Possible Sample Hazards/Remarks Maintain at 4° C

Sample Identification

BD18J0

(1)1000ml G bottle(~~Radiochemistry~~ Gross Alpha/Beta, Gamma Spec. Alpha Spec, Sr-90, C-14, Tc-99)	(1)1000ml G bottle(Radiochemistry, Sr-90, C-14, Tc-99)
(1) 250ml G bottle(ICP/AA metals, Hg)	(1) 250ml G bottle(ICP/AA metals, Hg)
(1) 250ml aG bottle(Semi-VOA, PCB's/PEST.)	(1) 250ml aG bottle(Semi-VOA, PCB's/PEST.)
(1) 125ml G bottle(Cyanide)	(1) 125ml G bottle(Cyanide)
(1) 125ml G bottle(VOA)	(1) 125ml G bottle(VOA)

☐ Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
CM Chance Cory Chance	Kermit Blum	1-21-92 1115
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90)

9213506.0860

000021

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector C M Chance Date Sampled 1-15-92 Time 0920 hours

Company Contact J.D. Fancher Telephone (509) 376-2081

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
0	1-1000ml glass	Soil	Gross alpha/beta, Gamma Spec.^ Alpha Spec., Sr-90, Tc-99, C-14
0	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
B018J0	1-250ml amber glass	Soil	Semi-VOA, PCB's/PEST.(CLP)
0	1-125ml glass	Soil	Cyanide(CLP)
0	1-125ml glass	Soil	VOA(CLP)
	1-1000ml glass	Soil	Gross alpha/beta, Gamma Spec. Sr-90, Tc-99, C-14
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
	1-250ml glass amber	Soil	Semi-VOA, PCB's/PEST.(CLP)
	1-125ml glass	Soil	Cyanide(CLP)
	1-125ml glass	Soil	VOA(CLP)

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 1-21-92

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406 (05/90)

9213502.0861 "Saturday Delivery" "Signature Security"

Contractor Westinghouse Hanford Co.	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W92-0-0123-29

PART I – TO BE COMPLETED BY ORIGINATOR

Department Environmental Engineering	Section Technical Baseline	Unit

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
TMA/NORCAL 2030 Wright Ave. Richmond, CA 94804	Attn: Robert Fox
	Full Title Sample Receipt

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 42 lbs.	Poly Ice Chest (RM #43 - Glass jars of soil, packed in vermiculite and blue ice. - Sample # B018T5, B018T3, B018T4, B018T6 B018T7, B018T8	

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Program not available on site.
Bill of Lading # 250986525 9

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release [signature]	RM Survey No 120418	Date 1-17-92
Location of Property (Area & Bldg.) 100-DR-1 Sodium Dichromate Tank	Contact C.E. Heiden	Phone 6-2640
Date Ready for Shipment 01/17/92	Cost Code to be Charged PB21C 81223	Approximate Date This Property will be Returned N/A
Originated By C.E. Heiden	Date 01/17/92 Authorized By [signature]	Date 1-17-92
Signature and Name of Property Control	Custodian Date Property Management Approval [signature]	Date 1-17-92

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient [signature]	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Date 1-17-92				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Green – Property Control Custodian (Issuing Office) Yellow – Retain Pink – Originator

Shipped to:

Container des

Dose measure
G/M survey:
Ion chamber
1 meter from

Labeling requ
none
rad. materi
limited qua
excepted ir
Low Speci
White I
Yellow II
Yellow II

Wipe tests:
local

ID #

radiation s

PULL FOR SHPT. NO. TAB

CHECK ☐ GBL ☐ FCCOD ☐

Bill to Shipper XX ☐ Bill to Consignee ☐ Third Party Billing ☐

EMERY WORLDWIDE

A CF Company

INTERNATIONAL

Same Day ☐ Express ☐ Business Documents ☐
AM ☐ PM ☐ Preferred ☐ Customs Clearance ☐
Second Day ☐ Saturday Delivery ☒ Standard ☐ Delivery ☐

E Shipper's Account Number 850281585

Date 01-17-92 | Origin PSC | Shipment Number 250986525 9

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
US DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD
BLDG 1163
2355 STEVENS DRIVE
RICHLAND WA Canada ☐

To:
ROBERT FOX
TMA/NORCAL
2030 WRIGHT AVE.
Hold for Pick Up ☐
RICHMOND CA Canada ☐

Tariff Dest. | Gateway

Check to Shipper $

EMERY WORLDWIDE will accept Consignee's check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation.

Customer's Reference Numbers
W81223 PB21C W92-0-0123#29

Zip 99352

E Consignee's Account Number 94804

Description	Pcs.	Dimensions L	W	H	Total Pieces	Total Weight (In Lbs.)
1 ICE CHEST RM#43 SOIL SAMPLES W92-0-0123#29	1	27	16	17	1	42

FOR INFORMATION OR RATES
CALL 1-800 44 EMERY
(1-800-443-6379)

Declared Value $

2 5 0 9 8 6 5 2 5 9

Remarks
SATURDAY DELIVERY
SIGNATURE SECURITY SERVICE

Zip Ship ☐
For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used
Urgent Letter 9X12 ☐ Urgent Pack 12X15 ☐

Shipper's Signature X

International Shipments
Free Domicile ☐ Commodity Code

Third Party Account Number mandatory for Third Party Billing. E Third Party Account Number

International Customs Value | International Insurance

Base Charge

Total Transportation Charges

Other Charges/Advance at Origin ☐ OC/AO $

1-OAK SAT

Terms and Conditions on Back

PLEASE TYPE OR USE BALL POINT PEN. BEAR DOWN FIRMLY! KEEP MARKS WITHIN BOXES TO ASSURE ACCURACY

1A ☐ 1B ☐ 1C ☐

FORM NO. 60001-46

CONSIGNEE — PACKAGE COPY — 4

9213506-0862

00003

RECORD OF DISPOSITION ROD-92-C0031

DATE: 1/17/92	LABORATORY: WESTON 100-DR-1

SAMPLE IDENTIFICATION NUMBERS

*Project WIDE

DISPOSITION OF SAMPLES

☐ CANCELLED (REASON)

☐ DAMAGED SAMPLE CONTAINER. ANALYSIS CANCELLED

☐ BROKEN GLASS CONTAMINATING SAMPLE. ANALYSIS CANCELLED

☒ OTHER SEE ATTACHED DSI.

APPROVED David L. Edwards 1/17/92 [signature] 1/23/92

PROJECT COORDINATOR DATE TECHNICAL REPRESENTATIVE DATE

9713506.0863

Subject: Alpha Spec.

---------- Message Contents ----------

Jon,

Weston would like to have you put the radionuclides for the alpha spec analysis on the chain of custody. The alpha spec can be used for several radionuclide determinations. If they are listed on the COC then Weston will know exactly what to perform for alpha spec.

The isotopes on the list that was provided to me for the 100-BR-1 project for alpha spec were:

Uranium-235,230
Plutonium-239/240
Americium-241

Thanks.

Dan Edwards

DON'T SAY IT – WRITE IT!

DATE: January 15, 1992

TO: Josie King, Weston Laboratories FROM: Dan Edwards, WHC OSM

cc: Karl Pool
Jeff Lerch
Jeanette Duncan

SUBJECT: 100-DR-1 ANALYSIS, ALPHA SPECTROSCOPY

Alpha Spectroscopy has been requested on samples from the 100-DR-1 Vadose project (OSM project number 91-003).

Alpha spectroscopy is to be performed on all 100-DR-1 Vadose samples that have this analysis indicated on the Sample Analysis Request Form. The isotopes of concern for the alpha spectroscopy are Uranium-235, Uranium-238, Plutonium-239/240, and Americium-241.

The letter written by M. A. Deck (dated October 23, 1991) concerning alpha/beta spectroscopy will not apply for this project.

RECORD OF DISPOSITION ROD-92-00043

DATE: 1/23/92 | LABORATORY: TMA 100-DR-1 91-093

SAMPLE IDENTIFICATION NUMBERS

B018T3	B018T7			
B018T4	B018T8			
B018T5	B018T9			
B018T6				

DISPOSITION OF SAMPLES

☐ CANCELLED (REASON) _____

☐ DAMAGED SAMPLE CONTAINER. ANALYSIS CANCELLED

☐ BROKEN GLASS CONTAMINATING SAMPLE. ANALYSIS CANCELLED

☒ OTHER TOTAL ACTIVITY REPORTS WERE NOT SENT WITH SAMPLES TO TMA. TOTAL ACTIVITY REPORT Supplied by Mike Stankovich on 1/22/92.

APPROVED Daniel L. Edwards 1/23/92
PROJECT COORDINATOR DATE

TECHNICAL REPRESENTATIVE 1/24/92
MIKE STANKOVICH DATE

SAMPLE STATUS REPORT FOR E 299, E-BLANK BOLBIS TIME: 1/16/92 8:25
DISPATCHED: 1/15/92 13:53 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 1/15/92 14:44

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.000000E 01 PICI/G	N	Y	PB21C

END OF REPORT

9716906.0868

SAMPLE STATUS REPORT FOR E 300. E-BLANK B018T6 TIME: 1/16/92 8:25
DISPATCHED: 1/15/92 13:53 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 1/15/92 14:44

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.000000E 01 PICI/G	N	Y	PB21C

END OF REPORT

SAMPLE STATUS REPORT FOR E 501. E-BLANK BOLATZ TIME: 1/16/92 8:25
DISPATCHED: 1/15/92 13:54 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 1/15/92 14:44

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.000000E 01 PICI/G	N	Y	PB21C

END OF REPORT

9713506.0870

SAMPLE STATUS REPORT FOR [illegible] 801878 [illegible]
DISPATCHED: 1/15/97 [illegible]
RECEIVED: 1/15/97 [illegible]

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.000000E-01 PICI/G	N	Y	PROJ C

END OF REPORT

9713506.0871

[illegible] 301BT9 TIME: [illegible]

[illegible] SAMPLE [illegible] NOT ACCEPTED [illegible]

RECEIVED: [illegible].72 14:[illegible]

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHANGE CODE
****	********	***	***	***	*****
4271	TOT-ACT	< 5.00000E 01 PICI/G	N	Y	[illegible]

END OF REPORT

RECORD OF DISPOSITION ROD-92-00044

DATE: 1/29/92 | LABORATORY: TMA | 100-DR-1 VADOSE

SAMPLE IDENTIFICATION NUMBERS

B018JO

DISPOSITION OF SAMPLES

☐ CANCELLED (REASON) _____

☐ DAMAGED SAMPLE CONTAINER. ANALYSIS CANCELLED

☐ BROKEN GLASS CONTAMINATING SAMPLE. ANALYSIS CANCELLED

☒ OTHER Alpha Spec. analytes not listed on C.O.C. or S.A.R. * SEE ATTACHED PSI to DELORES SANCHEZ (1/29/92). ALSO ROD-92-00031 to Weston.

APPROVED Daniel L. Edwards 1/29/92
PROJECT COORDINATOR DATE

M. Nademark 1/30/92
TECHNICAL REPRESENTATIVE DATE
NAIK

9713506.0872

DON'T SAY IT --WRITE IT!

DATE: January 29, 1992

TO: Delores Sanchez, TMA Laboratories FROM: Dan Edwards, WHC OSM

cc: Karl Pool
Jeff Lerch
Jeanette Duncan

SUBJECT: 100-DR-1 ANALYSIS, ALPHA SPECTROSCOPY

Alpha Spectroscopy has been requested on sample B018J0 from the 100-DR-1 Vadose project (OSM project number 91-083).

The isotopes of concern for the alpha spectroscopy are Uranium-235, Uranium-238, Plutonium-239/240, and Americium-241.

The sampling team has been instructed to list the specific radionuclides for Alpha Spectroscopy on the chain of custody and sample analysis request form.

9713506.0874

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: CM Chance

Company Contact: J.D. Fancher — Telephone: (509) 376-2081

Project Designation/Sampling Locations: 100 DR-1 Vadose Zone Sampling BH 116-DR-9A — Collection Date: 1-15-92

Ice Chest No.: SML-49 — Field Logbook No.: WHC-N-560

Bill of Lading/Airbill No.: — Offsite Property No.: W92-0-001

Method of Shipment: Overnight Air Delivery

Shipped to: TMA/NORCAL 2030 Wright Ave. Richmond Ca. 94804

Possible Sample Hazards/Remarks: Maintain at 4°C

Sample Identification

B018J0

(1)1000ml G bottle(~~Radiochemistry~~ Gross Alpha/Beta, Gamma Spec. Alpha Spec,Sr-90, C-14,Tc-99)	~~(1)1000ml G bottle(Radiochemistry, Sr-90, C-14,Tc-99)~~
(1) 250ml G bottle(ICP/AA metals,Hg)	~~(1) 250ml G bottle(ICP/AA metals, Hg)~~
(1) 250ml aG bottle(Semi-VOA,PCB's/PEST.)	~~(1) 250ml aG bottle(Semi-VOA,PCB's/PEST.)~~
(1) 125ml G bottle(Cyanide)	~~(1) 125ml G bottle(Cyanide)~~
(1) 125ml G bottle(VOA)	~~(1) 125ml G bottle(VOA)~~

☐ Field Transfer of Custody

CHAIN OF POSSESSION

(Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
CMChance / Cory Chance	Kermit Blum	1-21-92 1115
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector C M Chance Date Sampled 1-15-92 Time 0920 hours

Company Contact J.D. Fancher Telephone (509) 376-2081

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B018J0	1-1000ml glass	Soil	Gross alpha/beta, Gamma Spec. (Alpha Spec.), Sr-90, Tc-99, C-14
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
	1-250ml amber glass	Soil	Semi-VOA, PCB's/PEST.(CLP)
	1-125ml glass	Soil	Cyanide(CLP)
	1-125ml glass	Soil	VOA(CLP)
	1-1000ml glass	Soil	Gross alpha/beta, Gamma Spec. Sr-90, Tc-99, C-14
	1-250ml glass	Soil	ICP/AA metals, Hg(CLP)
	1-250ml glass amber	Soil	Semi-VOA, PCB's/PEST.(CLP)
	1-125ml glass	Soil	Cyanide(CLP)
	1-125ml glass	Soil	VOA(CLP)

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Hermit Blum Title Sample Control Supervisor Date 1-21-92

Analysis Required _____

RECORD OF DISPOSITION

PROJECT 91-93/100-DR-1 ROD-92-00051

DATE: 2/5/92 | LABORATORY: TMA

SAMPLE IDENTIFICATION NUMBERS

B018T3	B018T8	Samples changed to B01WZ3, B01WZ4, B01WZ5, B01WZ6, B01WZ7, B01WZ8
B018T4	B018T9	
B018T6	B018T5	Dea 10-26-94
B018T7		

DISPOSITION OF SAMPLES

☐ CANCELLED (REASON) _____

☐ DAMAGED SAMPLE CONTAINER. ANALYSIS CANCELLED

☐ BROKEN GLASS CONTAMINATING SAMPLE. ANALYSIS CANCELLED.

☒ OTHER ABOVE SAMPLES ALIQUOTS WERE NOT LABELED WITH SPECIFIC ANALYSIS REQUESTED FOR EACH. LAB SORTED FOR CORRECT ALIQUOT WITH ANALYSIS, PROCEED WITH ANALYSIS PER MIKE STANKOVICH.

APPROVED Nancy O Sequin 2-6-92
PROJECT COORDINATOR DATE

[signature] 2/10/92
TECHNICAL REPRESENTATIVE DATE

9713506.0877 THA/NCRC.AL

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector F.W. Gustafson Date Sampled 01/15/92 Time ____ hours

Company Contact Mike Stankovich Telephone (509) 376-2493

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested	Method	
B018T5	2-1000ml 1-120ml 1-250ml 1-100ml 5	Soil	ICP/AA Metals	6010	250 ml
			AND Hg	7470	
B018T3	1-250ml	Soil	Cyanide	9010	250 ml
B018T4	↑	↑	VOA	8240	120 ml
B018T6	|	|	Semi-VOA	8270	1000 ml
B018T7	↓	↓	PCB's/Pesticides	8080	
B018T8	1-250ml	Soil	Anions (IC)	EPA 300.0	
			Carbon 14	LAB SOP	60 ml
			Strontium-90	LAB SOP	1000 ml
			U-235	↑	
			U-238/239	|	
			Pu-239/240	|	
			Gross Alpha	|	
			Gross Beta	|	
			Gamma Spec	↓	
			Am-241	LAB SOP	
			TCLP	1311	250 ml
			NOTE: Sample #'s B018T3, B018T4, B018T6, B018T7, B018T8 to be analyzed for TCLP (Method 1311) only. (1-250 ml jars)		

Field Information** —

Special Handling and/or Storage —

Possible Sample Hazards —

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406 (05/90)

Westinghouse Hanford Company 9713506.0878

CHAIN OF CUSTODY

Custody Form Initiator C. E. HEIDEN (509)

Company Contact MIKE STANKOVICH Telephone 376-2493

Project Designation/Sampling Locations 91-93 100-DR-1 Collection Date 1-15-92

SODIUM DICHROMATE TANK SOIL SAMPLING

Ice Chest No. RM #43 Field Logbook No. WHC-N-429-1

Bill of Lading/Airbill No. 2509865259 Offsite Property No. W92-0-0623-29

Method of Shipment EMERY

Shipped to TMA/NORCAL RICHMOND, CA.

Possible Sample Hazards/Remarks N/A

Sample Identification

B018T5	SOIL	2 - 1000 ML	
		3 ~~4~~ - 250 ML CH 11-14-92	
		1 - 120 ML	
		1 - 60 ML	
B018T3	SOIL	1 - 250 ML	
B018T4		1 - 250 ML	
B018T6		1 - 250 ML	
B018T7		1 - 250 ML	
B018T8		1 - 250 ML	

☐ Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Relinquished by: C.E. Heiden C.E. Heiden		
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90)

9713506.0879 "Saturday Delivery" "Signature Security"

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
Westinghouse Hanford Co.		W92-0-0123-29

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Environmental Engineering	Technical Baseline	

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
TMA / NORCAL 2030 Wright Ave. Richmond, CA 94804	Attn: Robert Fox
	Full Title: Sample Receipt

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 42 lbs.	Poly Ice Chest (RM #43 - Glass jars of soil, packed in vermiculite and blue ice. - Sample # B018T5, B018T3, B018T4, B018T6 B018T7, B018T8	

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Program not available on site.
Bill of Lading # 250986525 9

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No	Date
[signature]	120418	1-17-92

Location of Property (Area & Bldg.)	Contact	Phone
100-DR-1 Sodium Dichromate Tank	C.E. Heiden	6-2640

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
01/17/92	PB21C 81223	N/A

Originated By	Date	Authorized By	Date
C.E. Heiden	01/17/92	[signature]	1-17-92

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[signature]	1-17-92

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[signature]				
Date 1-17-92				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

Westinghouse Hanford Company

Hanford Operations and Engineering Contractor for the US Department of Energy
P.O. Box 1970 Richland, Wa. 99352

NONCONFORMANCE REPORT

Page 1 of 1

No. B 07704

1. MFR/ORG: WHC | ITEM/MATERIAL NAME: ENVIR. SAMPLE | PART NO.: N/A
DRAWING/SPEC. NO.: N/A | REV.: N/A
PROGRAM/PROJECT: 100-DR-1 | P.O./W.O. NO.: 91-093
UNUSUAL OCCURRENCE REPORT REQUIRED: ☐ YES ☒ NO | SYSTEM/END USE: N/A | DATE: 1/15/92

2. DESCRIPTION OF NONCONFORMANCE

- SAMPLE Numbers B018T3, B018T4, B018T5, B018T6, B018T7, B018T8
- HEIS Numbers were duplicated on samples for 100-DR-1. SAMPLES WERE sent with identical numbers to both the TMA and Weston ~~laboratories~~ DE 1/23/92 laboratories.

3. REQUIREMENT VIOLATED

	DOCUMENT	REV	ZONE/PARA
Unique sample number not assigned to sample	WHC-EP-0372 Volume I HEIS users manual		

Daniel L. Edwards (ORIGINATOR) | 12500 ~~28000~~ DE 1/23/92 (ORGANIZATION) | 1/23/92 (DATE)

4. ASME CODE ITEM(s): ☒ NO ☐ YES. NOTIFY AUTHORIZED INSPECTOR. | WHC QAR: N/A

5. CAUSE OF NONCONFORMANCE
☐ PROCEDURES ☒ PERSONNEL ☐ MATERIALS ☐ EQUIPMENT ☐ OTHERS
REMARKS:

6. CORRECTIVE ACTION TO ELIMINATE CAUSE
INITIATION DATE _____ SERIAL NO. _____
RESPONSIBLE ORG. REP. _____ TITLE _____ DATE _____

7. RECOMMENDED DISPOSITION: ☐ ACCEPT ☐ REJECT ☐ REPAIR ☒ REWORK ☐ OTHER

8A. DISPOSITION JUSTIFICATION AND INSTRUCTIONS
The sample Numbers assigned to the Weston Lab shall remain the same. The numbers assigned to the TMA lab shall be changed as per the WHC Internal Memo # 81260-92-062 (see attached). The samples collected were divided into two separate sample bottles, and sent to two different laboratories. Each separate lab received the correct number of sample bottles and sizes; therefore, traceability was not compromised.
D-IV, PN-003, SW-01

8B. SUPPLIER ENG. NA | SUPPLIER QA NA

9. ADDITIONAL REVIEWS REQUIRED (WHC ONLY) ☐ YES ☒ NO
IF YES, IDENTIFY:

10. DISPOSITION APPROVAL (WHC ONLY)
☒ APPROVED ☐ DISAPPROVED ☐ OTHER (SEE CONTINUATION SHEET)
N. NAIKNIMBALKAR (N. Naiknimbalkar) 5/21/92 — COGNIZANT ENGINEER — DATE
G.S. CORRIGAN (Gary Corrigan) 5-21-92 — COGNIZANT QA ENGINEER — DATE
NA — AUTHORIZED INSPECTOR REVIEW — DATE

11. ADDITIONAL APPROVALS

NAME	TITLE	DATE	NAME	TITLE	DATE
NA			NA		

12. DISPOSITION ACTION COMPLETE
(Gary Corrigan) 5-21-92 — NAME — DATE | QTY. ACCEPT _____ | QTY. REJ. _____ | ➡ FOLLOW ON NCR

QA LOG NO. EQA-92-008

The issuance and acceptance of this request in no way limits or affects the warranty provisions of the order. This request shall not establish a precedent or obligation to accept similar conditions in the future.

FOLLOW-UP LEVEL ☐ A ☐ B ☐ C

Westinghouse Hanford Company	CHAIN OF CUSTODY COPY

Custody Form Initiator C. E. HEIDEN (509)

Company Contact MIKE STANKOVICH Telephone 376-2493

Project Designation/Sampling Locations 91-93 100-DR-1 Collection Date 1-15-92

SODIUM DICHROMATE TANK SOIL SAMPLING

Ice Chest No. RM #43 Field Logbook No. WHC-N-429-1

Bill of Lading/Airbill No. 250986525 9 Offsite Property No. W92-0-025-29

Method of Shipment EMERY

Shipped to TMA/NORCAL RICHMOND, CA.

Possible Sample Hazards/Remarks N/A

Sample Identification

B018T5	SOIL	2 - 1000 ML
		3 ~~4~~ - 250 ML
		C-M 11/5/92
		1 - 120 ML
		1 - 60 ML
B018T3	SOIL	1 - 250 ML
B018T4	SOIL	1 - 250 ML
B018T6	SOIL	1 - 250 ML
B018T7	SOIL	1 - 250 ML
B018T8	SOIL	1 - 250 ML

LABORATORY COPY

[ ] Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)		
Relinquished by: C.E. Heiden C.E. Heiden	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Westinghouse Hanford Company 9713506.0882

CHAIN OF CUSTODY

RFW 9201L074

Custody Form Initiator C. E. HEIDEN

Company Contact MIKE STANKOVICH (509) Telephone 376-2493

Project Designation/Sampling Locations 91-93 100-DR-1 Collection Date 1-15-92

SODIUM DICHROMATE TANK SOIL SAMPLING

Ice Chest No. RM #105 Field Logbook No. WHC-N-429-

Bill of Lading/Airbill No. 250986540 2 Offsite Property No. W92-0-023-30

Method of Shipment EMERY

Shipped to WESTON LIONVILLE, PA

Possible Sample Hazards/Remarks N/A

Sample Identification

B018T3	2-1000 mL	
B018T4	3-250 mL, 1-120 mL	
B018T6	1-60 mL	
B018T7	2-1000 mL, 3-250 mL	SOIL
B018T8	1-120 mL, 1-60 mL	
B018T9	1-120mL	
B018T5	1-250mL	SOIL

LABORATORY COPY

] Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)

elinquished by: C.E. Heiden C.E. Heiden	Received by:	Date/Time:
elinquished by: Emery	Received by:	Date/Time: 1-18-92 15:15
elinquished by:	Received by:	Date/Time:
elinquished by:	Received by:	Date/Time:

Final Sample Disposition

sposal Method:	Disposed by:	Date/Time:

mments:

Westinghouse Hanford Company | **Internal Memo**

From: Environmental Data Management 81260-92-062
Phone: 6-8034 H4-52
Date: April 24, 1992
Subject: SAMPLE NUMBER REASSIGNMENT - NCR B07704 (EQA-92-008)

To: N. M. Naiknimbalkar H4-55

cc: G. S. Corrigan H4-16
R. D. Fox H4-52
M. R. Schwab H4-52
Reference File #SCR 36
RDF File/LB

The NCR addressed the assignment of duplicate sample numbers issued for samples sent to two different analytical laboratories.

The Environmental Data Management (EDM) obtained six new HEIS sample numbers from the Office of Sample Management (OSM) to replace the duplicate numbers inadvertently assigned to the samples sent to the TMA Laboratories.

The new HEIS sample number assignments for the TMA laboratory numbers are:

PREVIOUSLY ASSIGNED	NEWLY ASSIGNED
B018T3	B01WZ3
B018T4	B01WZ4
B018T5	B01WZ5
B018T6	B01WZ6
B018T7	B01WZ7
B018T8	B01WZ8

Copies of the HEIS sample number assignment records are attached for filing with the NCR in the Project Files.

Z. Duane Farris
HEIS Data Coordinator

blu

Attachments 3

SAMPLE

```
                                                    MODE: query
          Sample Number B01WZ3                      Owner SYSTEM
            Assigned By OSM                       Control 0
          Assigned Date 02/05/92
            Assigned To D. Z. FARRIS/EDM
        Generation Date 01/29/92
                 Status C    Checked out
           Return Count
                  Media
 Lambert N/S Coordinate
 Lambert E/W Coordinate
```

F1Help SF1Code SF2Save SF5SQL F7Clr F8Exit F9Next SF9Back F10Exec SF10Count

Esc-chr: ^] help: ^]? port:U speed:unkwn parity:none echo:rem VT320 ....

SAMPLE

```
                                                    MODE: query
          Sample Number B01WZ4                      Owner SYSTEM
            Assigned By OSM                       Control 0
          Assigned Date 02/05/92
            Assigned To D. Z. FARRIS/EDM
        Generation Date 01/29/92
                 Status C    Checked out
           Return Count
                  Media
 Lambert N/S Coordinate
 Lambert E/W Coordinate
```

F1Help SF1Code SF2Save SF5SQL F7Clr F8Exit F9Next SF9Back F10Exec SF10Count

Esc-chr: ^] help: ^]? port:U speed:unkwn parity:none echo:rem VT320 ....

SAMPLE

```
                                                    MODE: query
          Sample Number B01WZ5                      Owner SYSTEM
            Assigned By OSM                       Control 0
          Assigned Date 02/05/92
            Assigned To D. Z. FARRIS/EDM
        Generation Date 01/29/92
                 Status C    Checked out
           Return Count
                  Media
Lambert N/S Coordinate
Lambert E/W Coordinate
```

F1Help SF1Code SF2Save SF5SQL F7Clr F8Exit F9Next SF9Back F10Exec SF10Count

Esc-chr: ^] help: ^]? port:U speed:unkwn parity:none echo:rem VT320 ....

SAMPLE

```
                                                    MODE: query
          Sample Number B01WZ6                      Owner SYSTEM
            Assigned By OSM                       Control 0
          Assigned Date 02/05/92
            Assigned To D. Z. FARRIS/EDM
        Generation Date 01/29/92
                 Status C    Checked out
           Return Count
                  Media
Lambert N/S Coordinate
Lambert E/W Coordinate
```

F1Help SF1Code SF2Save SF5SQL F7Clr F8Exit F9Next SF9Back F10Exec SF10Count

Esc-chr: ^] help: ^]? port:U speed:unkwn parity:none echo:rem VT320 ....

SAMPLE

```
                                                    MODE: query
        Sample Number B01WZ7                        Owner SYSTEM
          Assigned By OSM                         Control 0
        Assigned Date 02/05/92
          Assigned To D. Z. FARRIS/EDM
      Generation Date 01/29/92
              Status C    Checked out
        Return Count
               Media
Lambert N/S Coordinate
Lambert E/W Coordinate
```

F1Help SF1Code SF2Save SF5SQL F7Clr F8Exit F9Next SF9Back F10Exec SF10Count

Esc-chr: ^] help: ^]? port:U speed:unkwn parity:none echo:rem VT320 ....

SAMPLE

```
                                                    MODE: query
        Sample Number B01WZ8                        Owner SYSTEM
          Assigned By OSM                         Control 0
        Assigned Date 02/05/92
          Assigned To D. Z. FARRIS/EDM
      Generation Date 01/29/92
              Status C    Checked out
        Return Count
               Media
Lambert N/S Coordinate
Lambert E/W Coordinate
```

F1Help SF1Code SF2Save SF5SQL F7Clr F8Exit F9Next SF9Back F10Exec SF10Count

Esc-chr: ^] help: ^]? port:U speed:unkwn parity:none echo:rem VT320 ....

9716596.0887

CORRESPONDENCE DISTRIBUTION COVERSHEET

To: Distribution

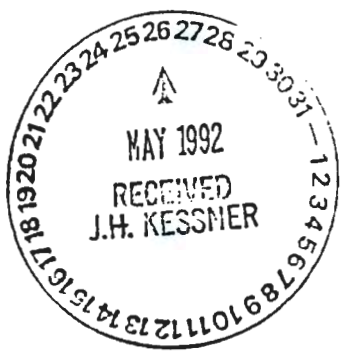
From: Environmental Quality Assurance
H4-16 / 6-8557 / 6-9490

Subject: DISTRIBUTION OF NCR #B07704 (EQA-92-008)

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		D. L. Edwards	T6-08	
		J. H. Kessner	T6-08	
		G. S. Corrigan	H4-16	
		N. M. Naiknimbalkar	H4-55	
		APA	B5-20	
		QUEST	L4-86	
		EQA File	H4-16	

Transmitted
Nancy
Karl



VALIDATION SUMMARY

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

PROJECT: Westinghouse	REVIEWER: SC	DATE: 10/26/92
LABORATORY: TMA	CASE:	SDG: B018J0
SAMPLES/MATRIX: SOIL		
B018J0, B018P9,		

1. COMPLETENESS AND CONTRACT COMPLIANCE

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal of the omitted data.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	✓	—	—
Cover Page	✓	—	—
Traffic Reports	—	—	—
Sample Data			
Inorganic Analysis Data Sheets	✓	—	—
Standards Data			
Initial and Continuing Calibration Verification	✓	—	—
CRDL Standard for AA and ICP	—	—	—
QC Summary			
Blanks	✓	—	—
ICP Interference Check Summary	✓	—	—
Spike Sample Recovery	✓	—	—
Post-Digestion Spike Sample Recovery	✓	—	—
Duplicate	✓	—	—
Laboratory Control Sample	✓	—	—
Standard Addition Results	—	—	—
ICP Serial Dilutions	✓	—	—
Instrument Detection Limits	✓	—	—
ICP Interelement Correction Factors	—	—	—
ICP Linear Ranges	✓	—	—
Preparation Log	✓	—	—
Analysis Run Log	✓	—	—
Raw Data			
ICP Raw Data	✓	—	—
Furnace AA Raw Data	✓	—	—
Mercury Raw Data	✓	—	—
Cyanide Raw Data	✓	—	—
Additional Data			
Internal laboratory chain-of-custody	✓	—	—
Laboratory Sample Preparation Records	—	—	—

Data Package Item	Present?:	Yes	No	N/A
Percent Solids Analysis Records		✓	✗	—
Reduction Formulae		—	✓	—
Instrument Run Logs		✓	—	—
Chemist Notebook Pages		✓	—	—

2. HOLDING TIMES

Have all samples been analyzed within holding times? (Yes) No N/A

ACTION: If any holding times have been exceeded qualify all affected results as estimated (J for detects and UJ for nondetects).

3. INITIAL CALIBRATIONS

Were all instruments calibrated daily, each set-up time and were the proper number of standards used? (Yes) No N/A

Are the correlation coefficients ≥0.995? (Yes) No N/A

Was a midrange cyanide standard distilled? (Yes) No N/A

ACTION: Qualify all data as unusable if reported from an analysis in which an instrument was not calibrated or was calibrated with less than the minimum number of standards. Qualify associated sample results > IDL as estimated (J) and results < IDL as estimated (UJ), if the correlation coefficient is < 0.995 or the laboratory did not distill the midrange cyanide standard.

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

Are ICV and CCV percent recoveries within control? (Yes) No N/A

Are there calculation errors? Yes (No) N/A

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

5. ICP INTERFERENCE CHECK SAMPLE

Has an ICS sample been analyzed at the proper frequency? (Yes) No N/A

Are the AB solution %R values within control? (Yes) No N/A

Are there calculation errors? Yes (No) N/A

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

6. LABORATORY BLANKS

Are target analytes present in the laboratory blanks? Yes (No) N/A

ACTION: Qualify all associated sample results for any analyte < 5 times the amount in any laboratory blank as nondetected (U). If analyte concentrations in the blank are > CRDL or below the negative CRDL, verify the laboratory has redigested and reanalyzed associated samples with analyte concentrations < 10 times the blank concentration. If the laboratory has not redigested and reanalyzed the samples, note in the validation narrative.

7. FIELD BLANKS

Are target analytes present in the field blanks? Yes No (N/A)

ACTION: Qualify all sample results for any analyte < 5 times the amount in any valid field blank as nondetected (U).

8. MATRIX SPIKE SAMPLE ANALYSIS

Are spike recoveries within the control limits? Yes (No) N/A

ACTION: Qualify the affected sample data according to the following requirements:

If spike recovery is > 125% and sample results are < IDL no qualification is required. If spike recovery is > 125% or < 75% qualify all positive results as estimated (J). If spike recovery is 30% to 74% qualify all nondetects as estimated (UJ). If spike recovery is < 30%, reject all nondetects (R). If the field blank has been used for spike analysis, note in the validation narrative.

9. LABORATORY CONTROL SAMPLE

Are percent recoveries within the acceptance limits? (Yes) No N/A

Are there calculation errors? Yes (No) N/A

ACTION: Qualify the sample data according to the following requirements:

AQUEOUS LCS - Qualify as estimated (J), all sample results > IDL, for which the LCS %R falls within the range 50-79% or > 120%. Qualify as estimated (UJ), all sample results < IDL, for which the LCS falls within the range of 50-79%. Qualify as unusable (R) all sample results, for which the LCS %R < 50%.

SOLID LCS - Qualify as estimated (J), all sample results > IDL for which the LCS result is outside the established control limits. Qualify as estimated (UJ), all sample results < IDL for which the LCS %R are lower than the established control limits.

10. PERFORMANCE AUDIT ANALYSES

Are the performance audit sample results within the acceptance limits? Yes No (N/A)

ACTION: Note the results of the performance audit sample analyses in the data validation narrative.

11. DUPLICATE SAMPLE ANALYSIS

Are RPD values acceptable? (Yes) No N/A

ACTION: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD results fall outside the appropriate control limits. If field blanks were used for laboratory duplicates, note in the validation narrative.

12. ICP SERIAL DILUTION

Are the serial dilution results acceptable? Yes (No) N/A

Is there evidence of negative interference? Yes (No) N/A

ACTION: Qualify the associated data as estimated (J) for those analytes in which the %D is outside the control limits. If evidence of negative interference is found, use professional judgment to qualify the data.

13. FIELD DUPLICATE SAMPLES

Do the RPD values exceed the control limits? Yes No (N/A)

ACTION: Note the results of the field duplicate samples in the validation narrative.

14. FIELD SPLIT SAMPLES

Do the RPD values exceed the control limits? Yes No (N/A)

ACTION: Note the results of the field split samples in the validation narrative.

1516. FURNACE ATOMIC ABSORPTION QUALITY CONTROL

Do all applicable analyses have duplicate injections? (Yes) No N/A

Are applicable duplicate injection RSD values within control? Yes (No) N/A

If no, were samples rerun once as required? (Yes) No N/A

Does the RSD for the rerun fall within the control limits? Yes (No) N/A

Were analytical spike recoveries within the control limits? Yes (No) N/A

If no, were MSA analyses performed when required?	Yes	No	N/A
Are MSA correlation coefficients ≥ 0.995?	Yes	No	N/A
If no, was a second MSA analysis performed?	Yes	No	N/A

ACTION: If duplicate injections are outside the acceptance limits and the sample has not been reanalyzed or the reanalysis is outside the acceptance limits, qualify the associated data as estimated (J for detects and UJ for nondetects). If the analytical spike recovery is $< 40\%$ qualify detects as estimated (J). If the analytical spike recovery is $\geq 10\%$ but $< 40\%$, qualify all nondetects as estimated (UJ) and if the analytical spike recovery is $< 10\%$, reject all nondetects (R). If the sample absorbance is $< 50\%$ of the analytical spike absorbance and the analytical spike recovery is $< 85\%$ or $> 115\%$, qualify all results as estimated (J for detects and UJ for nondetects). If method of standard additions (MSA) was required but was not performed, the MSA samples were spiked incorrectly, or the MSA correllation coefficient was < 0.995, qualify the associated detected results as estimated (J).

17. ANALYTE QUANTITATION AND DETECTION LIMITS

Have results been reported and calculated correctly?	Yes	No	N/A
Are results within the calibrated range of the instruments and within the linear range of the ICP?	Yes	No	N/A
Are all detection limits below the CRQL?	Yes	No	N/A

Action: If analyte quantitation is in error, contact the laboratory for explanation. If errors or deficiencies can not be resolved with the laboratory, qualify associated data as unusable (R).

18. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW?	Yes	No	N/A
Were project specific data quality objectives met for this analysis?	Yes	No	N/A

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B018J0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-01-165SAS No.: SDG No.: B018J0

Matrix (soil/water): SOIL Lab Sample ID: 01152-01S

Level (low/med): LOW Date Received: 01/22/92

% Solids: 91.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5620.00			P
7440-36-0	Antimony	1.70	U	N	P
7440-38-2	Arsenic	3.00			F
7440-39-3	Barium	60.20		E	P
7440-41-7	Beryllium	0.21	U		P
7440-43-9	Cadmium	0.21	U		P
7440-70-2	Calcium	7500.00			P
7440-47-3	Chromium	10.80			P
7440-48-4	Cobalt	8.60	B		P
7440-50-8	Copper	24.20			P
7439-89-6	Iron	15800.00			P
7439-92-1	Lead	3.40			F
7439-95-4	Magnesium	4710.00			P
7439-96-5	Manganese	302.00		N	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	11.70			P
7440-09-7	Potassium	825.00	B		P
7782-49-2	Selenium	0.81	U	W	F
7440-22-4	Silver	0.42	U		P
7440-23-5	Sodium	133.00	B		P
7440-28-0	Thallium	0.41	U		F
7440-62-2	Vanadium	34.80			P
7440-66-6	Zinc	35.40			P
	Cyanide	5.50	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

002

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B018P9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-01-165SAS No.: SDG No.: B018J0

Matrix (soil/water): SOIL Lab Sample ID: 01152-02S

Level (low/med): LOW Date Received: 01/22/92

% Solids: 96.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3610.00			P
7440-36-0	Antimony	1.50	U	N	P
7440-38-2	Arsenic	1.30	B		F
7440-39-3	Barium	67.40		E	P
7440-41-7	Beryllium	0.38	B		P
7440-43-9	Cadmium	0.19	U		P
7440-70-2	Calcium	2560.00			P
7440-47-3	Chromium	11.00			P
7440-48-4	Cobalt	3.30	B		P
7440-50-8	Copper	10.50			P
7439-89-6	Iron	6620.00			P
7439-92-1	Lead	2.30			F
7439-95-4	Magnesium	2920.00			P
7439-96-5	Manganese	432.00		N	P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	17.10			P
7440-09-7	Potassium	663.00	B		P
7782-49-2	Selenium	0.81	U		F
7440-22-4	Silver	0.38	U		P
7440-23-5	Sodium	129.00	B		P
7440-28-0	Thallium	0.41	U		F
7440-62-2	Vanadium	12.70			P
7440-66-6	Zinc	16.90			P
_____	Cyanide	5.00	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

ENVIRONMENTAL RECORDS TRANSMITTAL

TRANSMITTAL NUMBER: X01304

DATE PREPARED: August 11, 1992

TO (check one box):	MAILING ADDRESS:	PREPARED BY:
[ ] EFS Field Files, N3-05 [ ] ERE Field Files, H4-55 [ ] Environmental Data Management Center, H4-22 [x] Environmental Administrative Records, H4-22	Westinghouse Hanford Company c/o EDMC, H4-22 P.O. Box 1970 Richland, WA 99352	NAME, AFFILIATION: J. M. Duncan, WHC BLDG, ROOM, AREA: MO-028, 200-W ADDRESS: Richland, WA 99352 ORG. TITLE: Office of Sample Management MSIN: T6-08 PHONE: 3-3351 ORG. CODE: 12500

TO BE COMPLETED BY SENDER, EXCEPT SHADED AREAS, WHICH ARE COMPLETED BY THE RECIPIENT

ITEM	DATE	ID NUMBER	TITLE/DESCRIPTION	OU	TSD	TASK/SUBTASK	PAGE COUNT	FILE NUMBER
1	3-24-92	N2-01-165	Thermo Analytical, Analytical Laboratory Data Package for the 100-DR-1 project. The OSM data package ID number is B018J0-TMA-148. This is an Addendum Metals Analytical Laboratory Data Package previously transmitted on transmittal X00818. The sample and subset data reported is as follows: A) Metals (case # N2-01-165) Analytical Laboratory Data Package Subset (sample number B018J0), B) Metals (case # N2-01-165) Analytical Laboratory Data Package Subset (sample number B018P9).	100-DR-1 100-HR-3				

COMMENTS: Data is being transmitted without OSM verification or validation. Data will be validated by an offsite contractor.

RECEIVED BY: Monica Ellingworth DATE: 8/11/92

The signature below certifies that the documents submitted by this transmittal have been reviewed and are ready for processing.

SIGNATURE: SRD Jeanette M. Duncan DATE: 8/11/92

PROCESSED BY: DATE:

9213506.0896

(Kearney Copy)

TMA

ATTACHMENT 1 DATA TABLE

Collection date: 1/16/92

6/26 = Smpl date

Customer I.D.	TMA/Norcal Group No. 7009	Analysis	Results pCi/g ± 2 σ	
B018P9 (soil)	1	Gross Alpha	2.87 (2.87 ± 3.10)	E+00 R-E
		Gross Beta	9.35 (9.35 ± 2.10)	E+00
		^{14}C	13.23 (13.23 ± 5.88)	E+00
		^{90}Sr	-.26 (2.6 ± 3.2)	E-01 R(Sr
		^{99}Tc	.16 (1.6 ± 2.6)	E-01 R(Tc
		Gamma Scan:		
		^{40}K	11.20 (1.120 ± 0.099)	E+01
		^{51}Cr	17.39 <1.739	E+01 U
		^{60}Co	.02962 <6.062	E-02 U
		^{65}Zn	.1892 <1.892	E-01 U
		^{134}Cs	.02370 <6.370	E-02 U
		^{137}Cs	.04755 <4.755	E-02 U
		^{226}Ra	.3524 (3.524 ± 1.103)	E-01
		^{228}Th	.5469 (5.469 ± 1.094)	E-01
		^{232}Th	.5009 (5.009 ± 2.003)	E-01

RB 10/8

X01150
HR-3
GW Drilling

00005

EPA SAMPLE NO.

B018P9

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01D

Sample wt/vol: 5.0 (g/ X00818 File ID: 20123R14

Level: (low/med) LOW Received: 01/21/92

% Moisture: not dec. 8 Analyzed: 01/23/92

Column: (pack/cap) PACK tion Factor: 1.0

HR-3 GWD

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	~~8~~ 11	~~B~~ U
67-64-1	Acetone	21	~~B~~ U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

RB 6/23/93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B018P9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01D

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20123R14

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 8 Date Analyzed: 01/23/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

6/23/93 KD

9713506.0900

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

00007
EPA SAMPLE NO.

B018P9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 20131N06

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 8 dec. Date Extracted: 01/24/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

GPC Cleanup: (Y/N) N pH: 9.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	UJ
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl Alcohol	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	bis(2-Chloroisopropyl)Ether	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-Propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
65-85-0	Benzoic Acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1700	UJ
131-11-3	Dimethyl Phthalate	360	UJ
208-96-8	Acenaphthylene	360	UJ

RB 1/26/93

9713506.0901

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

00008
EPA SAMPLE NO.

B018P9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 20131N06

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 8 dec. ____ Date Extracted: 01/24/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

GPC Cleanup: (Y/N) N pH: 9.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1700	U J
83-32-9	Acenaphthene	360	U J
51-28-5	2,4-Dinitrophenol	1700	U J
100-02-7	4-Nitrophenol	1700	U J
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U J
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U J
84-74-2	Di-n-Butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	710	U
56-55-3	Benzo(a)anthracene	360	U
117-81-7	bis(2-Ethylhexyl)Phthalate	360	U
218-01-9	Chrysene	360	U J
117-84-0	Di-n-octyl Phthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U J
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)Pyrene	360	U
53-70-3	Dibenz(a,h)Anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

KB 1/26/93

1F

EPA SAMPLE NO.

B018P9

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 20131N06

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 8 dec. Date Extracted: 01/24/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/31/92

GPC Cleanup: (Y/N) N pH: 9.6 Dilution Factor: 1.00

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALCOHOL	2.38	940	~~BJ~~ J
2.	UNKNOWN ALCOHOL	2.85	22000	~~BJ~~ J
3.	UNKNOWN ALCOHOL	2.93	220	~~BJ~~ J
4.	UNKNOWN ALCOHOL	4.03	290	~~BJ~~ J
5.	UNKNOWN CARBOXYLIC ACID	21.54	180	J
6.	UNKNOWN ALKANE	26.04	140	J
7.	UNKNOWN ALKANE	27.27	220	J
8.	UNKNOWN ALKANE	28.47	360	J
9.	UNKNOWN ALKANE	29.62	250	J
10.	UNKNOWN ALKANE	30.72	140	J

RB 1/26/94

9713506.0903

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

00235
EPA SAMPLE NO.

B018P9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01088 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201088-01A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/21/92

% Moisture: not dec. 8 dec. __ Date Extracted: 01/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/12/92

GPC Cleanup: (Y/N) N pH: 9.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.6	UJ
319-85-7	beta-BHC	8.6	U
319-86-8	delta-BHC	8.6	U
58-89-9	gamma-BHC (Lindane)	8.6	U
76-44-8	Heptachlor	8.6	U
309-00-2	Aldrin	8.6	U
1024-57-3	Heptachlor epoxide	8.6	U
959-98-8	Endosulfan I	8.6	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	U
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	86	U
53494-70-5	Endrin ketone	17	U
5103-71-9	alpha-Chlordane	86	U
5103-74-2	gamma-Chlordane	86	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	86	U
11104-28-2	Aroclor-1221	86	U
11141-16-5	Aroclor-1232	86	U
53469-21-9	Aroclor-1242	86	U
12672-29-6	Aroclor-1248	86	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	170	U

RB
6/23/93

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B018P9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-01-165SAS No.: SDG No.: B018J0

Matrix (soil/water): SOIL Lab Sample ID: 01152-02S

Level (low/med): LOW Date Received: 01/22/92

% Solids: 96.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3610.00			P
7440-36-0	Antimony	1.50	U	UJ	P
7440-38-2	Arsenic	1.30	B		F
7440-39-3	Barium	67.40		J	P
7440-41-7	Beryllium	0.38	B	J	P
7440-43-9	Cadmium	0.19	U	U	P
7440-70-2	Calcium	2560.00			P
7440-47-3	Chromium	11.00			P
7440-48-4	Cobalt	3.30	B		P
7440-50-8	Copper	10.50			P
7439-89-6	Iron	6620.00			P
7439-92-1	Lead	2.30			F
7439-95-4	Magnesium	2920.00			P
7439-96-5	Manganese	432.00		J	P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	17.10			P
7440-09-7	Potassium	663.00	B		P
7782-49-2	Selenium	0.81	U		F
7440-22-4	Silver	0.38	U		P
7440-23-5	Sodium	129.00	B		P
7440-28-0	Thallium	0.41	U		F
7440-62-2	Vanadium	12.70			P
7440-66-6	Zinc	16.90			P
	Cyanide	5.00	U		AS

10/28/92 (JM)

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B018P9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-01-165SAS No.: SDG No.: B018J0

Matrix (soil/water): SOIL Lab Sample ID: 01152-02S

Level (low/med): LOW Date Received: 01/22/92

% Solids: 96.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3610.00			P
7440-36-0	Antimony	1.50	U	N J	P
7440-38-2	Arsenic	1.30	B		F
7440-39-3	Barium	67.40		E J	P
7440-41-7	Beryllium	0.38	B	y	P
7440-43-9	Cadmium	0.19	U		P
7440-70-2	Calcium	2560.00			P
7440-47-3	Chromium	11.00			P
7440-48-4	Cobalt	3.30	B		P
7440-50-8	Copper	10.50			P
7439-89-6	Iron	6620.00			P
7439-92-1	Lead	2.30			F
7439-95-4	Magnesium	2920.00			P
7439-96-5	Manganese	432.00		N J	P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	17.10			P
7440-09-7	Potassium	663.00	B		P
7782-49-2	Selenium	0.81	U		F
7440-22-4	Silver	0.38	U		P
7440-23-5	Sodium	129.00	B		P
7440-28-0	Thallium	0.41	U		F
7440-62-2	Vanadium	12.70			P
7440-66-6	Zinc	16.90			P
	Cyanide	5.00	U		AS

7/7/93SC

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B018J0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-01-165SAS No.: SDG No.: B018J0

Matrix (soil/water): SOIL Lab Sample ID: 01152-01S

Level (low/med): LOW Date Received: 01/22/92

% Solids: 91.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5620.00			P
7440-36-0	Antimony	1.70	U	N(UJ)	P
7440-38-2	Arsenic	3.00			F
7440-39-3	Barium	60.20		E(J)	P
7440-41-7	Beryllium	0.21	U	U	P
7440-43-9	Cadmium	0.21	U	U	P
7440-70-2	Calcium	7500.00			P
7440-47-3	Chromium	10.80			P
7440-48-4	Cobalt	8.60	B		P
7440-50-8	Copper	24.20			P
7439-89-6	Iron	15800.00			P
7439-92-1	Lead	3.40			F
7439-95-4	Magnesium	4710.00			P
7439-96-5	Manganese	302.00		N(J)	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	11.70			P
7440-09-7	Potassium	825.00	B		P
7782-49-2	Selenium	0.81	U	N(UJ)	F
7440-22-4	Silver	0.42	U		P
7440-23-5	Sodium	133.00	B		P
7440-28-0	Thallium	0.41	U		F
7440-62-2	Vanadium	34.80			P
7440-66-6	Zinc	35.40			P
	Cyanide	5.50	U		AS

10/28/92 (2nd)

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

002

FORM I - IN Rev.6/89

ATTACHMENT 1 DATA TABLE

Collection date: 1/15/92

Customer I.D.	TMA/Norcal Group No. 7010	Analysis	Results pCi/g ± 2 σ	
B018T5 (soil)	1	Gross Alpha	(4.62 ± 4.62)	E+00
		Gross Beta	(7.48 ± 2.90)	E+00
		^{14}C	(40.36 ± 6.83)	E+00
		^{90}Sr	(1.9 ± 3.1)	E-01
		^{234}U	(4.0 ± 0.7)	E-01
		^{235}U	(3 ± 2)	E-02
		^{238}U	(4.2 ± 0.7)	E-01
		^{238}Pu	(2 ± 3)	E-02
		^{239}Pu	(-1 ± 2)	E-02
		^{241}Am	(4.76 ± 0.979)	E-01
		Gamma Scan:		
		^{40}K	(1.105 ± 0.203)	E+01
		^{51}Cr	<3.597	E+01
		^{60}Co	<1.534	E-01
		^{65}Zn	<4.849	E-01
		^{134}Cs	<1.576	E-01
		^{137}Cs	<1.327	E-01
		^{226}Ra	(6.184 ± 2.977)	E-01
		^{228}Th	(8.998 ± 2.418)	E-01
		^{232}Th	<7.058	E-01
B018J0 (soil)	2	Gross Alpha	(4.95 ± 10.4)	E+00
		Gross Beta	(13.3 ± 4.85)	E+00
		^{14}C	(25.06 ± 6.16)	E+00
		^{90}Sr	(-0.18 ± 1.89)	E+00
		^{234}U	(5.1 ± 0.7)	E-01
		^{235}U	(1 ± 2)	E-02
		^{238}U	(4.6 ± 0.6)	E-01
		^{238}Pu	(-1 ± 2)	E-02
		^{239}Pu	(-1 ± 2)	E-02
		^{241}Am	(2.79 ± 4.79)	E-02
		Gamma Scan:		
		^{40}K	(1.059 ± 0.215)	E+01
		^{51}Cr	<4.319	E+01
		^{60}Co	<1.522	E-01
		^{65}Zn	<5.253	E-01
		^{134}Cs	<1.632	E-01
		^{137}Cs	<1.239	E-01
		^{226}Ra	(4.901 ± 1.988)	E-01
		^{228}Th	(1.020 ± 0.229)	E+00
		^{232}Th	(7.117 ± 4.410)	E-01

X01268
DR-1
Sodium Dichromate
(T5)

ATTACHMENT 1 DATA TABLE

Collection date: 1/15/92

Customer I.D.	TMA/Norcal Group No. 7010	Analysis	MDA	Results pCi/g ± 2 σ	
B018T5 (soil)	1	Gross Alpha	6.9	(4.62 ± 4.62)	E+00
		Gross Beta	7.0	(7.48 ± 2.90)	E+00
		^{14}C	11	(40.36 ± 6.83)	E+00
		^{90}Sr	.6	(1.9 ± 3.1)	E-01
		^{234}U		(4.0 ± 0.7)	E-01
		^{235}U		(3 ± 2)	E-02
		^{238}U		(4.2 ± 0.7)	E-01
		^{238}Pu		(2 ± 3)	E-02
		^{239}Pu		(-1 ± 2)	E-02
		^{241}Am		(4.76 ± 0.979)	E-01
		Gamma Scan:			
		^{40}K		(1.105 ± 0.203)	E+01
		^{51}Cr		<3.597	E+01
		^{60}Co		<1.534	E-01
		^{65}Zn		<4.849	E-01
		^{134}Cs		<1.576	E-01
		^{137}Cs		<1.327	E-01
		^{226}Ra		(6.184 ± 2.977)	E-01
		^{228}Th		(8.998 ± 2.418)	E-01
		^{232}Th		<7.058	E-01
B018J0 (soil)	2	Gross Alpha		(4.95 ± 10.4)	E+00 R
		Gross Beta		(13.3 ± 4.85)	E+00 R
		^{14}C	11	(25.06 ± 6.16)	E+00
		^{90}Sr	0.6	(-0.18 ± 1.89)	E+00 U
		^{234}U	.0134	(5.1 ± 0.7)	E-01
		^{235}U	.0123	(1 ± 2)	E-02 U
		^{238}U	.0106	(4.6 ± 0.6)	E-01
		^{238}Pu	.0344	(-1 ± 2)	E-02 U
		^{239}Pu	.04	(-1 ± 2)	E-02 U
		^{241}Am	.067	(2.79 ± 4.79)	E-02 U
		Gamma Scan:			
		^{40}K		(1.059 ± 0.215)	E+01
		^{51}Cr		<4.319	E+01 U
		^{60}Co		<1.522	E-01 U
		^{65}Zn		<5.253	E-01 U
		^{134}Cs		<1.632	E-01 U
		^{137}Cs		<1.239	E-01 U
		^{226}Ra		(4.901 ± 1.988)	E-01
		^{228}Th		(1.020 ± 0.229)	E+00
		^{232}Th		(7.117 ± 4.410)	E-01
		Tc-99	1.8	-6 ± 4.9	E-14

11-2-92 RB

X01463

ATTACHMENT 1 DATA TABLE

Collection date: 1/15/92

Customer I.D.	TMA/Norcal Group No. 7010	Analysis	Results pCi/g ± 2 σ	
B018T5 (soil)	1	Gross Alpha	(4.62 ± 4.62)	E+00
		Gross Beta	(7.48 ± 2.90)	E+00
		^{14}C	(40.36 ± 6.83)	E+00
		^{90}Sr	(1.9 ± 3.1)	E-01
		^{234}U	(4.0 ± 0.7)	E-01
		^{235}U	(3 ± 2)	E-02
		^{238}U	(4.2 ± 0.7)	E-01
		^{238}Pu	(2 ± 3)	E-02
		^{239}Pu	(-1 ± 2)	E-02
		^{241}Am	(4.76 ± 0.979)	E-01
		Gamma Scan:		
		^{40}K	(1.105 ± 0.203)	E+01
		^{51}Cr	<3.597	E+01
		^{60}Co	<1.534	E-01
		^{65}Zn	<4.849	E-01
		^{134}Cs	<1.576	E-01
		^{137}Cs	<1.327	E-01
		^{226}Ra	(6.184 ± 2.977)	E-01
		^{228}Th	(8.998 ± 2.418)	E-01
		^{232}Th	<7.058	E-01
B018J0 (soil)	2	Gross Alpha	(4.95 ± 10.4)	E+00
		Gross Beta	(13.3 ± 4.85)	E+00
		^{14}C	(25.06 ± 6.16)	E+00
		^{90}Sr	(-0.18 ± 1.89)	E+00
		^{234}U	(5.1 ± 0.7)	E-01
		^{235}U	(1 ± 2)	E-02
		^{238}U	(4.6 ± 0.6)	E-01
		^{238}Pu	(-1 ± 2)	E-02
		^{239}Pu	(-1 ± 2)	E-02
		^{241}Am	(2.79 ± 4.79)	E-02
		Gamma Scan:		
		^{40}K	(1.059 ± 0.215)	E+01
		^{51}Cr	<4.319	E+01
		^{60}Co	<1.522	E-01
		^{65}Zn	<5.253	E-01
		^{134}Cs	<1.632	E-01
		^{137}Cs	<1.239	E-01
		^{226}Ra	(4.901 ± 1.988)	E-01
		^{228}Th	(1.020 ± 0.229)	E+00
		^{232}Th	(7.117 ± 4.410)	E-01